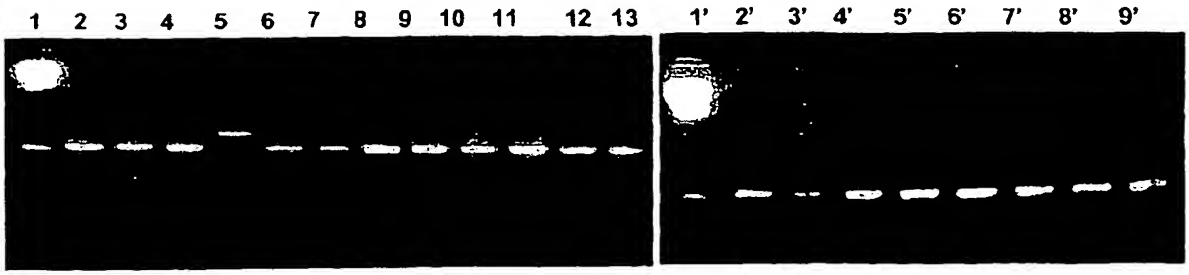
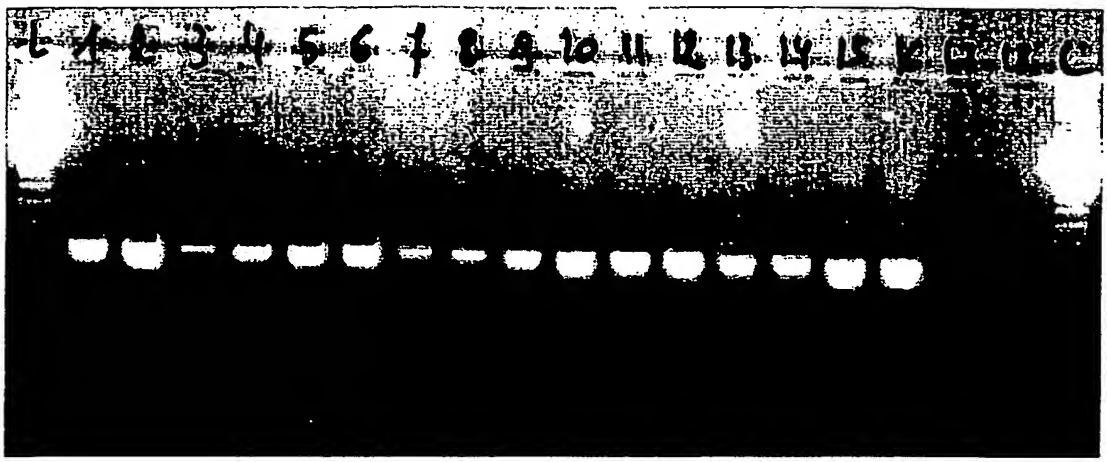
Figure 1 Amplification of molecular marker I (pur A) in Gram-positive bacteria



1 = DNA Ladder (λ/Hind III)
2 : Streptococcus pyogenes
3. Streptococcus penumoniae
4. Streptococcus oralis
5. Enterococcus hirae
6. Enterococcus casseliflavus
7. Streptococcus agalactiae
8. Streptococcus sanguis
9. Enterococcus faecalis
10. Enterococcus gallinarum
11. Enterococcus faecium
12. Enterococcus flavescens
13. Enterococcus durans

1' : DNA Ladder (λ/Hind III)
2' : Enterococcus raffinosus
3' : Enterococcus villorum
4' : Staphylococcus aureus
5' : Staph. epidermidis
6' : Staphylococcus hominis
7' : Bacillus anthracis
8' : Bacillus cereus
9' : Bacillus megatherium

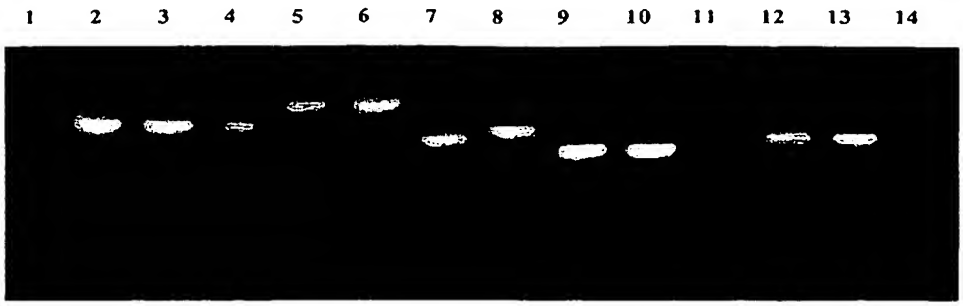
Figure 2. Amplification of molecular marker II (ptsI) in Gram-positive bacteria



L = DNA ladder (123 bp)

1. *Bacillus anthracis*
2. *Bacillus cereus*
3. *Listeria moniocytogenes*
4. *Bacillus subtilis*
5. *Streptococcus peneumoniae*
6. *Streptococcus pyogenes*
7. *Streptococcus agalactiae*
8. *Streptococcus mutans*
9. *Enterococcus faecalis*
10. *Staphylococcus aureus*
11. *Staphylococcus epidermidis*
12. *Bacillus thuringensis*
13. *Staphylococcus hominis*
14. *Enteococcus faecium*
15. *Clostridium perfringens*
16. *Bacillus mycoides*
17. *Negative control*
18. *Negative control*

Figure 3. Amplification of molecular marker III (SpyM3_0902- SpyM3_0903) in Gram-positive bacteria



1. DNA Ladder
2 : *Streptococcus pyogenes*
3. *Streptococcus pneumoniae*
4. *Enterococcus faecalis*
5. *Streptococcus agalactiae*
6. *Streptococcus sanguis*
7. *Enterococcus casseliflavus*
8. *Streptococcus oralis*
9. *Bacillus anthracis*
10. *Bacillus cereus*
11. *Enterococcus raffinosus*
12. *Enterococcus gallinarum*
13. *Enterococcus flavescens*
14. *Negative control of PCR.*

Figure 4: Marker I (PurA) sequences amplified from different Gram positive bacteria (SEQ ID NOs 1-62), and from a Gram-negative bacterium (SEQ ID NO: 63)

1. *Enterococcus faecalis* (SEQ ID NO. 1) EFCL

CTATTTGAAGGGCGCAAGGTGTCATGTTGGATATCGATCAAGGAACCTATCCATTTGTTACTTCCTCTAATCCAG
TAGCTGGTGGCGTAACTATCGGTAGTGGCGTTGGTCCATCAAAAATTAATAAAGTGGTTGGTGTCTGCAAAGCGT
ACACTTCACGTGTCGGTGACGGCCCATTCCCAACAGAATTATTTGATGAAACAGGAGAAACCATTCGTCGTGTCG
GTAAAGAATACGGAACAACAACAGGACGTCCGCGTCGTGTCGGTTGGTTTGATTCAGTAGTCATGCGTCATTCAA
AACGTGTATCAGGGATTACAAACTTGTCATTAAACTCGATTGACGTGTTAAGTGGTTTAGAAACGGTGAAAATTT
GTACAGCTTATGAACTTGATGGTGAATTAATTTATCATTATCCAGCAAGCTTGAAAGAATTAAGCCGCTGTAAAC
CAGTTTATGAAGAATTACCAGGTTGGTCTGAAGATATCACTGGTTGCAAAACTTTAGCCGATTTACCAGCTAATG
CTCGTAACTATGTGCATCGGATTTCAGAATTAGTTGGTGTGCGCATTTCAACATTCTCAGTAGGGCCAGACC

2. *Enterococcus gallinarum* (SEQ ID NO. 2) EGAL

CTCTTCGAGGTGCGCAAGGAGTTATGCTAGATATTGATCAAGGAACATATCCGTTCGTAACATCCTCAAATCCAG
TAGCTGGTGGAGTAACCATTGGTAGTGGAGTGGGTCCTTCTAAAATCAATAAAGTAGTTGGTGTTTGTAAAGCAT
ATACTTCAAGAGTTGGTGACGGCCCATTCCCAACAGAACTTTTTGATGAAACAGGCAATCAAATTCGTGAAGTTG
GCCGTGAATATGGTACGACAACTGGTCGTCCACGTCGTGTTGGTTGGTTTGACTCTGTTGTCATGCGTCATTCAA
AACGTGTTTCTGGTATCACGAATCTGTCTTTAAATTCAATTGATGTTTTGAGCGGCTTGGAAACTGTAAAAATTT
GTACTGCTTATGAATTAGATGGAGAATTGATTTATCATTATCCTGCAAGTCTAAAAGAATTGAATCGTTGTAAAC
CAGTCTATGAAGAGTTACCAGGCTGGTCAGAAGATATTACTGGATGCAAAACATTAGCTGATCTTCCTGAAAATG
CACGTAACTATGTACATCGTATCTCTGAATTAGTTGGGGTTCGTATCTCAACATTCTCAGTAGGTCCTGACC

3. *Enterococcus flavescens* (SEQ ID NO. 3) EFLA

CTTTTTGAAGGTGCTCAAGGCGTGATGCTGGATATCGACCAAGGAACCTATCCTTTCGTGACATCATCCAACCCC
GTTGCTGGGGGAGTCACTATTGGTAGTGGTGTGGGTCCTTCAAAAATCAACAAAGTCGTTGGTGTCTGCAAAGCT
TACACCTCTCGGGTAGGAGATGGTCCTTTCCCAACGGAACTGTTTGATGAAACAGGTGAACAAATCCGTAAGATC
GGTCGTGAATACGGAACAACGACAGGACGTCCTCGCCGTGTGGGCTGGTTTGATACCGTCGTGATGCGCCATTCA
AAACGTGTTTCAGGGATTACAAACCTATCCCTTAACTCGATCGATGTCTTGAGCGGCTTAGAAACCGTGAAGATC
TGTACGGCTTATGAACTAGACGGCGAATTGATCTATCATTACCCAGCAAGCTTGAAAGAGTTGAACCGCTGCAAA
CCAGTCTACGAAGAACTTCCTGGCTGGTCTGAAGACATTACTGGCTGCAAAACATTAGCAGATCTGCCAGAAAAT
GCACGCAATTACGTTCACCGCATCTCTGAATTAGTCGGTGTCCGCATTTCGACCTTCTCAGTAGGGCCNGACC

4. *Streptococcus agalactiae* (SEQ ID NO. 4) SAGA

CTCTTTGAAGGGCGCAAGGAGTTATGCTCGACATTGATCAAGGAACATACCCATTTGTAACATCTTCCAATCCAG
TAGCAGGTGGTGTCACAATTGGTTCGGGAGTTGGACCAAGTAAAATTAATAAAGTAGTAGGTGTATGTAAAGCTT
ACACTAGCCGTGTTGGTGATGGACCATTCCCAACAGAACTTTTTGATGAGGTTGGTGACCGTATTCGTGAGATTG
GTAAAGAGTATGGTACAACGACCGGTCGTCCTCGTCGCGTTGGATGGTTTGATTCTGTTGTTATGCGTCACAGCC

GTCGAGTATCAGGTATTACTAACCTCTCTCTGAATTCAATTGATGTTCTTTCAGGGCTTGATACGGTGAAAATTT
GTGTGGCTTATGACCTTGATGGGAAACGTATTGACTATTACCCAGCAAGCCTTGAACAGCTAAAACGTTGTAAAC
CAATCTATGAAGAATTACCGGGCTGGTCTGAAGATATTACAGCTTGTCGTAGCTTAGATGATCTTCCAGAAAATG
CACGTAATTACGTTCGCCGTGTTGGCGAATTGGTTGGTGTTCGTATTTCTACTTTNCTCAGTAGGNCCAGGTC

5. Streptococcus sanguis (SEQ ID NO. 5) SSAN

CTTTTTGAAGGGGCTCAAGGAGTTATGCTCGACATTGATCAAGGAACATACCCATTTGTAACATCTTCCAATCCA
GTAGCAGGTGGTGTCACAATTGGTTCGGGAGTTGGACCAAGTAAAATTAATAAAGTAGTAGGTGTATGTAAAGCT
TACACTAGCCGTGTTGGTGATGGACCATTCCCAACAGAACTTTTTGATGAGGTTGGTGACCGTATTCGTGAGATT
GGTAAAGAGTATGGTACAACGACCGGTCGTCCTCGTCGCGTTGGATGGTTTGATTCTGTTGTTATGCGTCACAGC
CGTCGAGTATCAGGTATTACTAACCTCTCTCTGAATTCAATTGATGTTCTTTCAGGGCTTGATACGGTGAAAATT
TGTGTGGCTTATGACCTTGATGGGAAACGTATTGACTATTACCCAGCAAGCCTTGAACAGCTAAAACGTTGTAAA
CCAATCTATGAAGAATTACCGGGCTGGTCTGAAGATATTACAGCTTGTCGTAGCTTAGATGATCTTCCAGAAAAT
GCACGTAATTACGTTCGCCGTGTTGGCGAATTGGTTGGTGTTCGTATTTCTACTTTCTCAGTTGGGTCCAGACC

6. Enterococcus faecium (SEQ ID NO. 6) EFCM

TTCTTCGAAGGGGCGCAAGGGGTTATGCTGGATATTGACCAAGGGACTTATCCATTTGTAACTTCTTCTAATCCA
GTTGCAGGGGAGTCACCATCGGTTCCGGTGTTGGTCCGAGCAAAATTGACAAGGTAGTTGGTGTCTGCAAGGCCT
ACACCAGTCGGGTCGGAGATGGACCATTCCCAACAGAGCTTTTTGATGAAGTTGGTGACCGCATTCGTGATATCG
GCCACGAATATGGCACTACCACTGGTCGCCCACGTCGGGTAGGTTGGTTTGACTCGGTTGTTATGCGCCATAGCC
GCCGTGTATCAGGGATTACCAATCTTTCGCTTAACTCCATCGATGTCTTGAGTGGTCTGGATACAGTGAAAATCT
GTGTAGCTTATGACTTGGATGGCCAAAGAATCGACCACTACCCAGCTAGTCTGGAACAGCTCAAGCGCTGCAAGC
CGATTTACGAAGAGCTGCCAGGCTGGTCAGAGGACATCACTGGAGTCCGCAGTCTGGAAGACTTGCCAGAAAATG
CCCGTAACTATGTTCGCCGAGTGAGTGAGCTGGTTGGCGTTCGCATTTCTACCTTNCTCAGTAGGGCCAGACC

7. Enterococcus durans (SEQ ID NO. 7) EDUR

CTCTTTGAAGGGGCACAAGGTGTGATGTTGGATATCGATCAAGGAACGTATCCATTTGTGACTTCTTCTAATCCG
GTAGCTGGTGGTGTAACGATCGGTAGTGGCGTTGGCCCTTCAAAGATCAATAAAGTCGTTGGTGTATGTAAAGCT
TATACTTCTCGTGTAGGAGATGGCCCATTCCCAACAGAACTATTTGACGAAACAGGTCAACAAATCCGTGAAGTC
GGTCGTGAATATGGTACGACAACAGGTCGACCTCGTCGTGTCGGTTGGTTTGATACAGTCGTGGTGCGCCATTCA
AAACGTGTATCAGGAATCACTAACCTATCATTGAATTCAATCGATGTATTAAGCGGACTAGAAACAGTAAAAATC
TGTACAGCGTATGAATTAGATGGAGAATTGATCTATCATTACCCAGCAAGCCTGAAAGAATTGAAACGTTGCAAA
CCAGTATACGAAGAACTTCCTGGTTGGTCTGAAGATATTACAGCATGTAAAACACTTGCTGAACTACCAGAAAAC
GCCCGTAACTATGTTAGACGTATCTCAGAGCCTGTAGGAGTCCGTATTTCAACATTCTCAGTAGGTCCAGACC

8. Streptococcus pyogenes (SEQ ID NO. 8) SPYO

CTATTTGAAGGGGCACAAGGGGTTATGCTTGATATTGACCAGGAACGTACCCATTTGTAACGTCTTCAAACCCAG
TTGCTGGTGGTGTAACCATTGGTTCTGGTGTTGGCCCAAATAAAATCAACAAAGTAGTTGGTGTCTGTAAAGCCT
ACACAAGCCGTGTCGGTGATGGGCCATTCCCTACAGAACTCTTTGATGAAGTGGGTGAGCGCATTCGTGAAGTGG
GTCATGAGTACGGGACAACGACCGGCCGTCCACGTCGTGTCGGTTGGTTTGATTCGGTTGTCATGCGCCACAGTC

GTCGTGTATCAGGTATTACTAACCTCTCTCTGAATTCAATTGATGTTCTTTCAGGGCTTGATACGGTTAAGATTT
GTGTGGCTTATGACCTTGATGGGAAACGTATTGACTATTACCCAGCAAACCTTGAACAACTCAAACGTTGCAAAC
CAATCTATGAAGAATTACCAGGCTGGCAAGAGGACATCACAGGTGTTCGTAGCCTTGATGAGCTTCCTGAAAATG
CCCGCAACTACGTTCGTCGTGTTGGAGAATTGGTTGGCGTTCGCATTTCAACCTTCTCAGTTGGGCCAGACC

9. Streptococcus pneumoniae (SEQ ID NO. 9) SPNE

CTATTTGAAGGGGCTCAAGGTGTTATGCTAGATATCGACCAAGGTACTTATCCATTTGTTACGTCATCAAACCCT
GTAGCTGGTGGTGTGACAATTGGTTCTGGTGTCGGTCCAAGCAAGATTGACAAGGTTGTAGGTGTATGTAAAGCT
TATACGAGTCGTGTAGGAGATGGTCCTTTCCCAACTGAGTTGTTTGATGAAGTGGGAGAACGTATCCGTGAAGTG
GGTCATGAATATGGTACAACAACTGGTCGTCCACGTCGTGTAGGTTGGTTTGACTCAGTTGTGATGCGTCATAGC
CGTCGTGTTTCTGGTATTACTAACCTTTCTTTGAACTCTATTGATGTTTTGAGCGGTTTGGATACTGTGAAAATC
TGTGTGGCCTATGATCTTGACGGTCAACGTATTGACTACTATCCAGCTAGTCTTGAGCAATTGAAACGTTGCAAG
CCTATCTATGAAGAGTTGCCAGGTTGGTCAGAAGATATTACCGGAGTTCGCAATTTGGAAGATCTTCCTGAGAAT
GCGCGTAACTATGTTCGTCGTGTGAGTGAATTGGTTGGCGTTCGTATTTCTACTTTTCTCAGTAGGTCCAGGCC

10. Streptococcus oralis (SEQ ID NO. 10) SORA

CTTTTCGAAGGTGCGCAAGGTGTCATGTTGGACATTGATCAAGGGACTTATCCATTTGTTACTTCTTCAAACCCT
GTCGCTGGTGGTGTGACGATTGGGTCTGGTGTTGGTCCAAGTAAGATTGACAAGGTTGTAGGTGTCTGTAAAGCC
TACACAAGTCGTGTAGGAGATGGACCGTTCCCAACTGAATTATTTGATGAAGTGGGAGATCGCATCCGTGAAGTA
GGTCATGAATATGGTACAACAACTGGTCGTCCACGTCGTGTGGGTTGGTTTGACTCAGTTGTGATGCGTCACAGC
CGCCGTGTATCTGGGATTACCAATCTTTCATTGAACTCTATAGATGTTTTGAGTGGTTTGGATACTGTGAAAATC
TGTGTCGCCTATGATCTTGATGGTCAACGTATTGATTACTATCCTGCTAGTCTTGAGCAGTTGAAACGTTGTAAG
CCAATCTACGAGGAATTGCCAGGTTGGTCAGAAGACATCACTGGAGTCCGTAATTTGGAAGACCTTCCTGAGAAT
GCACGCAACTATGTTCGTCGTGTAAGCGAGTTGGTTGGTGTTCGTATCTCAACTTTCTCAGTTGGGCCAGATC

11. Staphylococcus hominis (SEQ ID NO. 11) SHOM

CTCTTTGAAGGAGCGCAAGGAGTTATGTTAGATATCGACCATGGTACATATCCTTTTGTAACGTCAAGTAATCCT
GTGGCAGGTAATGTGACAGTAGGAACTGGCGTGGGTCCAACCTTCGTATCTAAAGTGATTGGGGTATGTAAATCC
TATACATCTCGTGTAGGTGACGGCCCATTCCCTACTGAATTATTCGACGAAGATGGTCATCATATTAGAGAAGTA
GGTCGTGAATATGGAACGACAACAGGACGTCCTCGTCGTGTAGGTTGGTTCGACTCAGTTGTATTACGTCACTCT
CGTCGTGTAAGTGGTATTACAGACTTATCTATTAACTCAATTGACGTTTTAACAGGTTTAGATACGGTTAAAATT
TGTACAGCTTATGAGTTAGATGGTGAAACAATCACAGAATATCCAGCAAACTTAGACCAATTACGTCGTTGTAAA
CCAATTTTCGAAGAGTTACCTGGTTGGACGGAAGACATTACAGGTTGTCGTACATTAGAAGAATTACCTGAAAAC
GCACGTAAATACTTAGAACGTATTTCTGAATTATGTGGCGTTCATATTTCAATCTTCTCAGTAGGTCCAGGCC

12. Bacillus anthracis 1978 (SEQ ID NO. 12)

GCTTCANTCGACCCGGTACGTACCCGTTCGTTACATCTTCTAACCCAATTGCTGGTGGTGTAACAGTTGGAACTG
GAGTTGGTCCTGCGAAAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGCGTTGGTGATGGTCCAT
TCCCTACTGAGCTTCATGACGAAATTGGTCATCAAATTCGTGAAGTTGGTCGTGAGTATGGAACGACAACTGGTC
GTCCACGCCGCGTAGGTTGGTTCGATAGCGTTGTTGTAAGACATGCACGTCGTGTTAGTGGTTTAACAGATTTAT

CATTAAACTCTATCGACGTTCTAACTGGTATTCCAACACTTAAAATTTGTGTTGCTTACAAATGCGATGGGAAAG
TTATCGATGAAGTTCCAGCAAACTTAAACATTTTAGCGAAATGTGAGCCTGTATACGAAGAGCTTCCAGGTTGGA
CAGAAGATATTACTGGTGTAAGATCATTAGATGAGCTTCCTGAAAATGCACGAAAATACGTAGAACGTGTTTCTG
AGTTAACAGGAATTCAATTATCTATGTTCTCAGTG

13. ***Bacillus anthracis Butare*** **(SEQ ID NO. 13)**

GCTTGCTATCGACCCGGTACGTACCCGTTCGTTACATCTTCTAACCCAATTGCTGGTGGTGTAACAGTTGGAACT
GGAGTTGGTCCTGCGAAAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGCGTTGGTGATGGTCCA
TTCCCTACTGAGCTTCATGACGAAATTGGTCATCAAATTCGTGAAGTTGGTCGTGAGTATGGAACGACAACTGGT
CGTCCACGCCGCGTAGGTTGGTTCGATAGCGTTGTTGTAAGACATGCACGTCGTGTTAGTGGTTTAACAGATTTA
TCATTAAACTCTATCGACGTTCTAACTGGTATTCCAACACTTAAAATTTGTGTTGCTTACAAATGCGATGGGAAA
GTTATCGATGAAGTTCCAGCAAACTTAAACATTTTAGCGAAATGTGAGCCTGTATACGAAGAGCTTCCAGGTTGG
ACAGAAGATATTACTGGTGTAAGATCATTAGATGAGCTTCCTGAAAATGCACGAAAATACGTAGAACGTGTTTCT
GAGTTAACAGGAATTCAATTATCTATGTTCTCGTG

14. ***Bacillus anthracis Sterne*** **(SEQ ID NO. 14)**

CTTCGACNCGGTACGTACCCGTTCGTTACATCTTCTAACCCAATTGCTGGTGGTGTAACAGTTGGAACTGGAGTT
GGTCCTGCGAAAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGCGTTGGTGATGGTCCATTCCCT
ACTGAGCTTCATGACGAAATTGGTCATCAAATTCGTGAAGTTGGTCGTGAGTATGGAACGACAACTGGTCGTCCA
CGCCGCGTAGGTTGGTTCGATAGCGTTGTTGTAAGACATGCACGTCGTGTTAGTGGTTTAACAGATTTATCATTA
AACTCTATCGACGTTCTAACTGGTATTCCAACACTTAAAATTTGTGTTGCTTACAAATGCGATGGGAAAGTTATC
GATGAAGTTCCAGCAAACTTAAACATTTTAGCGAAATGTGAGCCTGTATACGAAGAGCTTCCAGGTTGGACAGAA
GATATTACTGGTGTAAGATCATTAGATGAGCTTCCTGAAAATGCACGAAAATACGTAGAACGTGTTTCTGAGTTA
ACAGGAATTCAATTATCTATGTTCTCAGTGGCCCC

15. ***Bacillus anthracis*** **1655H85 (SEQ ID NO. 15)**

GGTNCGTACCCGTTCGTTACATCTTCTAACCCAATTGCTGGTGGTGTAACAGTTGGAACTGGAGTTGGTCCTGCG
AAAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGCGTTGGTGATGGTCCATTCCCTACTGAGCTT
CATGACGAAATTGGTCATCAAATTCGTGAAGTTGGTCGTGAGTATGGAACGACAACTGGTCGTCCACGCCGCGTA
GGTTGGTTCGATAGCGTTGTTGTAAGACATGCACGTCGTGTTAGTGGTTTAACAGATTTATCATTAAACTCTATC
GACGTTCTAACTGGTATTCCAACACTTAAAATTTGTGTTGCTTACAAATGCGATGGGAAAGTTATCGATGAAGTT
CCAGCAAACTTAAACATTTTAGCGAAATGTGAGCCTGTATACGAAGAGCTTCCAGGTTGGACAGAAGATATTACT
GGTGTAAGATCATTAGATGAGCTTCCTGAAAATGCACGAAAATACGTAGAACGTGTTTCTGAGTTAACAGGAATT
CAATTATCTATGTTCTCAGTGGCCCCNGGNCCNAN

16. ***Bacillus anthracis*** **Coda-cerva (SEQ ID NO. 16)**

GGTNCGTACCCGTNCGTTACATCTTCTAACCCAATTGCTGGTGGTGTAACAGTTGGAACTGGAGTTGGTCCTGCG
AAAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGCGTTGGTGATGGTCCATTCCCTACTGAGCTT
CATGACGAAATTGGTCATCAAATTCGTGAAGTTGGTCGTGAGTATGGAACGACAACTGGTCGTCCACGCCGCGTA
GGTTGGTTCGATAGCGTTGTTGTAAGACATGCACGTCGTGTTAGTGGTTTAACAGATTTATCATTAAACTCTATC

GACGTTCTAACTGGTATTCCAACACTTAAAATTTGTGTTGCTTACAAATGCGATGGGAAAGTTATCGATGAAGTT
CCAGCAAACTTAAACATTTTAGCGAAATGTGAGCCTGTATACGAAGAGCTTCCAGGTTGGACAGAAGATATTACT
GGTGTAAGATCATTAGATGAGCTTCCTGAAAATGCACGAAAATACGTAGAACGTGTTTCTGAGTTAACAGGAATT
CAATTATCTATGTTCTCAGTGGCCCCNNGGNCCCA

17. ***Bacillus anthracis*** **2054H82 (SEQ ID NO. 17)**

NGCTTNAATCGACCCGGTACGTACCCGTTCGTTACATCTTCTAACCCAATTGCTGGTGGTGTAACAGTTGGAACT
GGAGTTGGTCCTGCGAAAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGCGTTGGTGATGGTCCA
TTCCCTACTGAGCTTCATGACGAAATTGGTCATCAAATTCGTGAAGTTGGTCGTGAGTATGGAACGACAACTGGT
CGTCCACGCCGCGTAGGTTGGTTCGATAGCGTTGTTGTAAGACATGCACGTCGTGTTAGTGGTTTAACAGATTTA
TCATTAAACTCTATCGACGTTCTAACTGGTATTCCAACACTTAAAATTTGTGTTGCTTACAAATGCGATGGGAAA
GTTATCGATGAAGTTCCAGCAAACTTAAACATTTTAGCGAAATGTGAGCCTGTATACGAAGAGCTTCCAGGTTGG
ACAGAAGATATTACTGGTGTAAGATCATTAGATGAGCTTCCTGAAAATGCACGAAAATACGTAGAACGTGTTTCT
GAGTTAACAGGAATTCAATTATCTATGTTCTCAGT

18. ***Bacillus cereus ATCC 10987*** **(SEQ ID NO. 18)BCER10987**

GNCNCGGTACGTACCCGTTCGTTACATCTTCTAACCCAATTGCTGGCGGTGTAACAGTTGGAACTGGAGTTGGTC
CTGCGAAAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGCGTTGGTGATGGTCCATTCCCTACTG
AGCTTCATGATGAAATTGGTCATCAAATTCGTGAAGTTGGTCGCGAGTATGGAACGACAACTGGTCGTCCACGCC
GCGTAGGTTGGTTCGATAGCGTTGTTGTAAGACATGCACGTCGTGTTAGTGGTTTAACGGATCTATCATTAAATT
CTATCGACGTTTTAACAGGTATTCCAACTCTTAAAATTTGTGTAGCTTACAAATACAATGGCGAAGTTATTGATG
AAGTTCCAGCTAACTTAAACATTTTAGCGAAATGTGAGCCTGTATATGAAGAGCTTCCAGGTTGGGAAGAAGATA
TTACTGGTGTAAAATCATTAGATGAACTTCCTGAAAATGCACGAAAATACGTAGAACGTGTTTCTGAGTTAACAG
GAATTCAAATATCTATGTTCTCAGTAGNCCCC

19. ***Bacillus cereus ATCC 14579*** **(SEQ ID NO. 19)BCER14579**

GGTCGTACCCGTTCGTTACATCTTCTAACCCAATTGCTGGTGGTGTAACAGTTGGAACTGGAGTTGGTCCTGCGA
AAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGCGTTGGTGATGGTCCATTCCCTACTGAGCTTC
ATGATGAAATTGGTCATCAAATTCGTGAAGTTGGTCGCGAGTATGGAACGACAACTGGTCGTCCACGCCGCGTAG
GTTGGTTCGATAGCGTTGTTGTAAGACATGCACGTCGTGTTAGTGGTTTAACGGATCTATCATTAAATTCTATCG
ACGTTTTAACAGGTATTCCAACTCTTAAAATTTGTGTAGCTTACAAATACAATGGCGAAGTTATTGATGAAGTTC
CAGCTAACTTAAACATTTTAGCGAAATGTGAGCCTGTATATGAAGAGCTTCCAGGTTGGGAAGAAGATATTACTG
GTGTAAAATCATTAGATGAACTTCCTGAAAATGCACGAAAATACGTAGAACGTGTTTCTGAGTTAACAGGAATTC
AAATATCTATGTTCTCAGTNGGCCCC

20. ***Bacillus megatherium*** **(SEQ ID NO. 20) BMEG**

CTATTCGAAGGGGCACAAGGTGTTATGTTAGATATCGATCAAGGAACATATCCATTTGTTACATCTTCAAACCCA
GTAGCGGGTGGAGTAACAATTGGTTCTGGGGTAGGTCCATCTAAAATCAAACACGTTGTAGGTGTATCAAAAGCG
TATACAACTCGTGTTGGTGACGGCCCTTTCCCAACTGAATTAACAAACGAAATCGGTGATCAAATCCGTGAAGTA
GGACGTGAATATGGTACAACAACTGGTCGTCCTCGCCGTGTAGGTTGGTTCGACAGTGTAGTTGTACGTCATGCT

CGTCGCGTTAGTGGAATCACAGATCTATCTTTAAACTCAATTGATGTATTAACGGGAATTGAGACATTAAAGATT
TGCGTAGCTTATCGTTATAAAGGGGAAGTTATGGAAGAATTCCCTGCTAGCTTAAAAACACTTGCAGAGTGCGAA
CCTGTATATGAAGAGCTTCCAGGTTGGACAGAAGATATTACGGGTGTGAAAACATTAGATGAGTTACCTGATAAC
GCTCGCCACTACTTAGAGCGCGTGTCTCAATTAACAGGTATTCCTTTATCTATTTTCTCAGTAGGTCCAGGCC

21. ***Enterococcus casseliflavus*** **(SEQ ID NO. 21)** **ECAS**

TATTCGAAGGNAGCTCAAGGCGTGATGCTGGATATCGACCAAGGAACCTATCCTTTCGTGACATCATCCAACCCC
GTTGCTGGAGGTGTCACCATCGGTAGTGGTGTGGGTCCTTCAAAAATCAACAAAGTCGTTGGTGTCTGCAAAGCT
TACACCTCTCGGGTAGGAGATGGTCCTTTCCCAACGGAACTGTTTGATGAAACAGGTGAACAAATTCGTAAGATC
GGTCGTGAATACGGAACAACGACAGGACGTCCTCGCCGTGTGGGCTGGTTTGATACCGTCGTGATGCGCCATTCA
AAACGGGTCTCAGGGATCACGAATCTATCCCTTAACTCGATCGATGTCTTGAGCGGCTTAGAAACCGTGAAGATC
TGTACGGCTTATGAACTAGACGGCGAATTGATCTATCATTACCCAGCAAGCTTGAAAGAGTTGAACCGCTGCAAA
CCAGTCTACGAAGAACTTCCTGGCTGGTCTGAAGACATTACTGGCTGCAAAACATTAGCAGATCTGCCAGAAAAT
GCACGCAATTACGTTCACCGCATCTCTGAATTAGTCGGTGTCCGCATTTCGACCTTCTCAGTAGGTCCAGACC

22. ***Enterococcus raffinosus*** **(SEQ ID NO. 22)** **ERAF**

CTATTTGAAGGTGCTCAAGGCGTTATGCTGGATATTGATCAAGGAACCTATCCATTTGTTACTTCTTCGAACCCA
GTTGCCGGTGGGGTAACTATCGGTAGTGGTGTAGGACCTGCTAAAATCGACAAAGTTGTCGGTGTTTGTAAAGCC
TATACTTCACGCGTAGGTGATGGACCTTTCCCAACTGAATTGTTTGATGAAGTTGGAGATCAGATTCGTGAAGTC
GGTCGTGAATATGGAACGACTACTGGTCGTCCACGTCGTGTGGGCTGGTTTGACTCGGTTGTGATGCGTCATTCA
AAACGTGTTTCTGGGATTACGAATCTTTCTTTAAACTCGATTGATGTCTTGAGCGGTCTGGATACAGTGAAAATT
TGTACAGCGTATGAGCTGGACGGAGAACTAATTTACCATTATCCAGCAAGCCTAAAAGAATTAAATCGTTGTAAG
CCCGTTTATGAAGAACTACCTGGTTGGAGCGAAGATATTACAGGCTGCCGTGATTTAGCTGATCTACCGGAAAAT
GCGCGTAATTATGTACGTCGCGTTTCTGAACTTGTGGGTGTGCGTATCTCGACCTTCTCAGTTGGTCCTGGTC

23. ***Staphylococcus aureus*** **(SEQ ID NO. 23)** **SAUR**

CTATTTGAAGGGGCACAAGGTGTAATGTTAGATATCGACCATGGTACATATCCATTCGTTACATCAAGTAATCCA
ATTGCAGGTAACGTTACTGTTGGTACAGGTGTAGGTCCTACATTCGTTTCAAAGGTAATTGGTGTATGTAAAGCT
TATACATCACGTGTTGGTGATGGTCCATTCCCTACTGAATTATTCGATGAAGATGGACATCATATTAGAGAAGTT
GGTCGTGAATATGGTACAACAACAGGACGTCCACGTCGTGTAGGTTGGTTTGATTCAGTTGTATTACGTCACTCT
CGTCGTGTAAGTGGTATTACAGATTTATCTATTAACTCAATCGATGTTTTAACAGGCCTAGACACAGTGAAAATC
TGTACAGCTTATGAATTAGACGGTAAAGAAATTACTGAGTACCCAGCAAACTTAGATCAATTAAAACGTTGTAAA
CCAATCTTTGAAGAGTTACCAGGTTGGACAGAAGACGTAACAAGTGTGCGTACTTTAGAAGAATTACCTGAAAAT
GCACGTAAATATTTAGAGCGTATTTCAGAATTATGTAATGTACAAATTTCTATCTTCTCAGTAGGTCCAGGCC

24. ***Staphylococcus epidermidis*** **(SEQ ID NO. 24)** **SEPI**

CTCTTCGAAGGTGCTCAAGGTGTCATGTTAGATATCGACCATGGTACATATCCATTCGTTACATCTAGTAATCCA
GTTGCAGGTAACGTTACAGTAGGTACAGGTGTTGGCCCTACATCAGTGTCTAAAGTGATTGGTGTATGTAAATCA
TATACATCTCGTGTAGGTGACGGTCCATTCCCAACTGAACTTTTTGATGAAGATGGCCACCATATTAGAGAAGTG
GGTCGTGAATATGGTACAACTACTGGACGTCCACGTCGTGTAGGTTGGTTCGACTCAGTTGTATTACGTCATTCA

CGTCGTGTAAGTGGTATCACAGATCTTTCAATTAACTCAATCGACGTTTTAACAGGATTAGACACAGTTAAAATT
TGTACTGCTTACGAATTAGATGGTGAAAAAATTACTGAATACCCAGCAAACTTAGATCAATTAAGACGTTGTAAA
CCTATCTTCGAAGAGCTTCCAGGTTGGACTGAAGACATTACAGGTTGTCGTAGTTTAGATGAACTTCCTGAGAAT
GCACGTAATTACTTAGAGCGTATTTCAGAATTATGCGGTGTCCATATTTCAATCTTCTCAGTAGGTCCTGGTC

25. ***Streptococcus mitis*** **(SEQ ID NO. 25)** **SMIT**

TATGGCTAGCNATAGACCAAGGTACGTATCCATTTGTTACGTCATCAAACCCTGTGGCTGGTGGTGTTACGATTG
GTTCTGGTGTTGGTCCAAGTAAGATTGACAAGGTTGTAGGTTTATGTAAAGCCTATACGAGTCGAGTAGGAGACG
GTCCTTTCCCAACTGAATTGTTTGATGAAGTGGGAGAACGTATCCGTGAAGTTGGTCATGAATATGGTACAACAA
CTGGTCGTCCACGTCGTGTGGGTTGGTTTGACTCAGTTGTGATGCGTCATAGTCGTCGTGTTTCTGGTATTACTA
ATCTTTCATTGAACTCTATCGATGTTTTGAGTGGTTTAGATACAGTGAAAATCTGTGTGGCCTATGATCTTGATG
GTCAACGTATTGACTACTATCCAGCTAGTCTTGAGCAATTGAAACGTTGCAAGCCTATCTATGAAGAGTTGCCAG
GTTGGTCAGAAGATATTACTGGAGTTCGTAATTTGGAAGATCTTCCTGAGAATGCGCGTAACTATGTTCGTCGTG
TGAGTGAATTGGTTGGCGTTCGTATTTCTACTTTCTCAGTAG

26. ***Streptococcus species*** **(SEQ ID NO. 26)** **SSPE**

ATGGCTTGCTATTGACCAAGGGTACATACCCATTTGTAACATCATCTAACCCAGTCGCTGGTGGTGTAACAATCG
GTTCTGGTGTTGGTCCAAGTAAAATCAACAAAGTTGTCGGTGTATGTAAAGCCTACACAAGCCGTGTTGGTGACG
GACCATTCCCAACTGAACTTTTAGACGAAGTTGGTGACCGCATCCGTGAAGTGGGTCACGAATATGGGACAACAA
CTGGACGTCCACGTCGTGTTGGTTGGTTTGACTCAGTTGTTATGCGTCACAGCCGCCGCGTATCAGGTATCACAA
ACTTGTCACTTAACTCAATTGACGTTCTTTCAGGTCTTGATACGGTCAAAATCTGTGTGGCATACGACCTTGACG
GTCAACGTATCGACCACTACCCAGCAAGCCTTGAACAATTGAAACGTTGTAAACCAATCTACGAAGAATTGCCAG
GTTGGTCAGAAGACATCACAGGTTGCCGTAGCCTAGATGAACTTCCCGAAAATGCTCGTGACTACGTTCGCCGTG
TTGGTGAACTCGTTGGTGTTCGCATTTCAACATTCTCAGTTGGCCCC

27. ***Streptococcus canis*** **(SEQ ID NO. 27)** **SCAN**

TGGCTTGCNATCGACCAAGGTAACTTACCCATTTGTTACTTCTTCAAACCCAGTTGCTGGTGGGGTAACAATCGG
TTCAGGTGTTGGTCCAAGCAAGATCAATAAAGTTGTCGGTGTATGTAAAGCTTACACAAGCCGTGTTGGTGACGG
TCCGTTCCCAACAGAACTTCTAGATGAAGTTGGAGATCGTATCCGTGAAATTGGTCACGAATATGGTACAACAAC
TGGACGTCCACGTCGTGTTGGTTGGTTTGACTCAGTTGTTATGCGTCACAGCCGCCGCGTATCAGGTATCACAAA
CTTGTCACTTAACTCAATCGATGTTCTTTCAGGACTTGATACTGTTAAAATCTGTGTGGCATACGACCTTGACGG
TCAACGTATCGACCACTACCCAGCAAGTCTTGAACAATTGAAACGTTGTAAACCAATCTACGAAGAATTGCCAGG
TTGGTCAGAAGACATCACAGGTTGCCGTAGCCTAGATGAACTTCCCGAAAATGCTCGTGACTACGTTCGCCGTGT
TGGTGAACTCGTTGGTGTTCGCATTTCAACATTCTCAGTTGGCCCC

28. ***Streptococcus mutans*** **(SEQ ID NO. 28)** **SMUT**

TATGGCTTGCNATTGACCAAGGTAACCTATCCATTTGTAACTTCATCAAATCCAGTTGCAGGTGGCGTTACCATC
GGATCTGGTGTTGGACCAAGTAAAATCAATAAGGTTGTTGGTGTCTGCAAAGCCTATACCAGCCGTGTAGGTGAT
GGTCCTTTCCCCACAGAACTTTTTGACCAAACGGGAGAGCGCATTCGTGAAGTTGGGCATGAATACGGGACAACA
ACAGGGCGTCCGCGTCGAGTTGGTTGGTTTGACTCAGTTGTTATGCGTCACAGCCGCCGTGTATCAGGCATTACC

AATTTATCTCTTAACTGTATTGATGTACTTTCAGGTCTTGATATCGTAAAAATCTGTGTAGCCTATGATTTGGAT
GGAAAACGGATTGATCACTACCCTGCCAGTCTCGAACAACTCAAACGCTGTAAACCTATTTATGAAGAATTGCCG
GGCTGGTCTGAAGATATTACAGGGGTTCGCAGTTTAGAAGATCTTCCTGAAAATGCTCGTAATTATGTCCGCCGT
GTAAGTGAATTAGTTGGTGTTCGTATTTCTACTTTCTCAGTNGTCCCC

29. ***Streptococcus gordonii*** **(SEQ ID NO. 29)** **SGOR**

TAATGCTAGCAATTGACCAAGGTACCTATCCATTTGTAACCTCATCTAATCCAGTTGCTGGTGGTGTAACGATCG
GTTCTGGTGTGGGTCCTAGCAAGATTGACAAAGTAGTGGGTGTTTGTAAAGCCTATACAAGTCGTGTTGGTGATG
GTCCTTTCCCAACAGAGCTTTTCGATGAAGTAGGTGACCGCATTCGTGAGGTTGGTCATGAGTATGGTACAACAA
CAGGACGTCCGCGTCGAGTTGGTTGGTTTGACTCTGTTGTTATGCGCCATAGCCGCCGTGTATCTGGGATTACCA
ATCTTTCGCTTAACTCTATCGATGTTTTGAGCGGTCTGGATACAGTCAAGATCTGTGTAGCCTATGATTTGGATG
GCCAAAGAATCGACCACTATCCAGCTAGTTTGGAACAGCTTAAACGTTGTAAGCCGATTTACGAAGAGCTTCCTG
GATGGTCTGAAGATATTACTGGCGTTCGTAAGTTAGAAGATCTTCCAGAAAATGCTCGCAACTATGTTCGGCGAG
TAAGCGAGTTGGTTGGTGTACGTATTTCCACCTTCTCAGTTGGCCCC

30. ***Bacillus species*** **(SEQ ID NO. 30)** **BSPE**

TATGGCTTGCAATTGACNCGGTACGTACCCATTCGTTACATCTTCTAACCCGATTGCGGGTGGTGTAACAGTTGG
AACTGGAGTTGGTCCTGCGAAAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGTGTTGGTGACGG
TCCATTCCCTACTGAACTTAATGATGAAATTGGTCATCAAATTCGTGAAGTTGGTCGTGAGTACGGAACAACAAC
TGGTCGTCCGCGCCGCGTAGGTTGGTTCGATAGCGTTGTTGTAAGACATGCGCGTCGTGTTAGTGGTTTAACGGA
TCTATCATTAAATTCTATCGACGTTTTAACAGATATTCCGACTCTTAAAATTTGTGTTGCTTACAAATACAATGG
CGAAGTTATCGATGAAGTTCCAGCAAACTTAAACATTTTAGCAAAATGTGAGCCTGTATATGAAGAGCTTCCAGG
TTGGACAGAAGATATTACTGGTGTAAAATCATTAGACGAGCTTCCTGAAAATGCACGAAAATACGTAGAACGTGT
TTCTGAGTTAACAGGAATTCAATTATCTATGTTCTCAGTNGTCCCC

31. ***Bacillus pumilus*** **(SEQ ID NO. 31)** **BPUM**

GTTATGGCTTGCTATTGATCAAGGGACATATCCATTTGTCACGTCATCTAACCCAGTAGCTGGAGGAGTGACGAT
TGGTTCTGGCGTAGGACCAACAAAAATTCAACATGTGGTCGGCGTGTCAAAAGCGTACACAACACGTGTTGGAGA
TGGCCCATTCCCGACAGAACTCCATGATGAAATTGGCGATCAAATCCGTGAGGTTGGCCGTGAATACGGTACAAC
AACTGGACGTCCGCGCCGTGTTGGCTGGTTTGACAGTGTCGTTGTCCGTCATGCTCGACGTGTGAGCGGGATTAC
AGATCTATCTCTTAACTCAATTGATGTACTGACAGGGATTGAAACATTGAAAATCTGTGTCGCTTATAAATTGAA
CGGAGAAATCACAGAGGAATTCCCAGCAAGTCTAAATGAACTAGCGAAATGTGAGCCTGTCTACGAAGAAATGCC
AGGATGGACAGAGGATATTACAGGCGTGAAGAATTTAAGCGAACTGCCTGAAAATGCCCGTCATTATTTAGAGCG
CATTTCACAATTAACAGGTATTCCACTTTCCATTTTCTCAGTTGNCCCC

32. ***Enterococcus villorum*** **(SEQ ID NO. 32)** **EVIL**

TATCGACCAGGGACATATCCATTTGTTACTTCTTCCATCCAGTAGCAGGTGGTGTAACAATTGGTAGTGGCGTTG
GTCCATCTAAAATTAATAAAGTCGTCGGAGTATGTAAAGCTTATACTTCTCGTGTTGGAGATGGCCCGTTCCCTA
CAGAATTATTTGATGAAACAGGGCAACAAATACGTGAAGTAGGTCGTGAATATGGCACAACAACAGGTCGTCCAC
GACGAGTTGGATGGTTTGATACGGTTGTTATGCGCCATTCAAAACGTGTATCAGGTATTACAAATTTATCTCTTA

ATTCGATTGATGTATTAAGCGGATTAGAAACAGTAAAAATTTGTACGGCCTATGAACTAGATGGTGAGCTGATTT
ATCATTACCCAGCAAGTTTGAAAGAATTGAAACGTTGTAAACCAGTATATGAAGAACTACCTGGATGGTCTGAAG
ATATTACGAAATGCAAGACACTTTCTGAATTGCCAGAAAATGCACGTAACTATGTAAGACGTATTTCTGAGCTTG
TAGGTGTACGCATCTCCACATTTCTCAGTGGNCCC

33. *Bacillus thuringiensis serovar israelensis* BTHUISR
(SEQ ID NO. 33)

CNCGGTACGTACCCGTTCGTTACATCTTCTAACCCGATTGCGGGTGGTGTAACAGTTGGAACTGGAGTTGGCCCT
GCGAAAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGTGTTGGTGACGGTCCATTCCCTACTGAA
CTTAATGATGAAATTGGTCATCAAATTCGTGAAGTTGGTCGTGAGTACGGAACAACAACTGGTCGTCCGCGCCGC
GTAGGTTGGTTCGATAGCGTTGTTGTAAGACATGCGCGTCGTGTTAGTGGTTTAACGGATCTATCATTAAATTCT
ATCGACGTTCTAACAGATATTCCAACTCTTAAAATTTGTGTTGCTTACAAATACAATGGCGAAGTTATCGATGAA
GTTCCAGCAAACTTAAACATTTTAGCGAAATGTGAGCCTGTATATGAAGAGCTTCCAGGTTGGACAGAAGATATT
ACTGGTGTAAAATCATTAGACGAGCTTCCTGAAAATGCAAGAAAATACGTAGAACGTGTTTCTGAGTTAACAGGA
ATTCAATTATCTATGTTCTCAGTGGCCCC

34. *Bacillus thuringiensis* serovar *kurstaki* BTHUKUR
(SEQ ID NO. 34)

GGTCGTATCCATTCGTTACATCTTCTAACCCAGTTGCTGGTGGTGTAACAATCGGTTCTGGAGTTGGTCCTTCTA
AAATCAATCGTGTAGTAGGCGTATGTAAAGCATATACAAGCCGTGTTGGTGACGGTCCATTCCCTACTGAACTTA
ATGATGAAATTGGCCATCAAATTCGTGAAGTTGGTCGTGAATATGGTACAACAACAGGTCGTCCACGTCGCGTAG
GTTGGTTTGACAGCGTTGTTGTAAGACATGCACGCCGTGTGAGTGGTTTAACAGATTTATCTTTAAACTCTATCG
ACGTATTAACAGGTATTCCAACTGTGAAAATCTGTATTGCATATAAGTATAATGGAGAAGTTCTGGATGAAGTTC
CAGCAAACTTAAACATTTTAGCAAAATGTGAGCCTGTATATGAAGAGCTTCCAGGTTGGACAGAAGATATTACTG
GTGTAAAATCATTAGAGGAGCTTCCTGAAAATGCAAGACATTATGTAGAGCGTGTGTCTCAATTAACAGGTATCC
AATTATCTATGTTCTCAGTTGNCCCCC

35. *Bacillus mycoïdes MYC003* (SEQ ID NO. 35) BMYC003

GGTNCGTACCCATTCGTTACATCTTCTAACCCGATTGCTGGTGGTGTAACAGTTGGAACTGGAGTTGGTCCTGCG
AAAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGTGTAGGTGATGGTCCGTTCCCTACTGAGCTT
CATGATGAAATTGGTCATCAAATTCGTGAAGTTGGTCGTGAATACGGAACAACAACTGGTCGTCCACGCCGCGTA
GGTTGGTTCGATAGCGTTGTTGTAAGACATGCACGTCGTGTTAGTGGTTTAACAGATCTATCATTAAATTCTATC
GACGTTCTAACAGGTATTCCAACTCTTAAAATTTGTGTTGCTTACAAATACAATGGCGAAGTTATCGATGAAGTT
CCAGCAAACTTAAACATTTTAGCGAAATGTGAGCCTGTATATGAAGAGCTTCCAGGTTGGACAGAAGATATTACT
GGTGTAAGAGCATTAGACGAGCTTCCTGAAAATGCACGAAAATACGTAGAACGTGTTTCTGAGTTAACAGGAATT
CAATTATCTATGTTCTCAGTGGNCCCCCGG

36. *Bacillus mycoïdes NRS306* (SEQ ID NO. 36) BMYC306

CGGTNCGTACCCGTTCGTTACATCTTCTAACCCGATTGCTGGTGGTGTAACAGTTGGAACTGGAGTTGGTCCTGC
GAAAGTTACTCGCGTTGTAGGTGTGTGTAAAGCATATACAAGCCGTGTAGGTGATGGTCCATTCCCTACTGAGCT

TCATGATGAAATTGGTCATCAAATTCGTGAAGTTGGTCGTGAGTATGGAACGACAACTGGTCGTCCACGCCGCGT
AGGTTGGTTCGATAGCGTTGTTGTAAGACATGCACGTCGTGTTAGTGGTTTAACAGATTTATCATTAAATTCTAT
CGACGTTCTAACAGGTATTCCAACTCTTAAAATTTGTGTTGCTTACAAATACAATGGCGAAGTTATCGATGAAGT
TCCAGCAAACTTAAACATCTTAGCGAAATGTGAGCCTGTATATGAAGAGCTTCCAGGTTGGGAAGAAGATATTAC
TGGTGTAAAATCATTAGACGAACTTCCTGAAAATGCAAGAAAATACGTAGAGCGTGTTTCTGAATTAACAGGAAT
CCAATTATCTATGTTCTCAGT

37. *Bacillus weihenstephanensis* (SEQ ID NO. 37) BWEI

TTTTTTTNGGAAGNGCGCAAGGTGTTATGCTTGATATCGACCACGGTACGTACCCGTTCGTTACATCTTCTAACC
CAATTGCTGGTGGTGTAACAGTTGGAACTGGAGTTGGTCCTGCGAAAGTTACTCGCGTTGTAGGTGTATGTAAAG
CATATACAAGCCGTGTTGGTGATGGTCCATTCCCTACTGAACTTAATGATGAAATCGGTCACCAAATTCGTGAAG
TTGGTCGTGAATACGGAACAACAACGGGTCGTCCACGCCGTGTAGGTTGGTTCGATAGCGTTGTTGTAAGACATG
CACGTCGTGTTAGTGGTTTAACAGATTTATCATTAAACTCTATCGATGTATTAACAGGTATTCCAACTGTTAAAA
TTTGTGTTGCTTACAAATGCAATGGCGAAGTTATCGATGAAGTTCCAGCTAACTTAAACATTTTAGCGAAATGTG
AGCCTGTATATGAAGAGCTTCCNGGTTGGACAGAAGATGTTACTGCTGTGAAATCATTGGATGAGCTTCCTGAAA
ATGCAAGAAAATACGTAGAGCGTGTTTTCTGAATTAACNGGAAGCCAATTNNCAAG

38. *Staphylococcus haemolyticus* (SEQ ID NO. 38) SHAE

CAAGGTGTCATGTTAGATATCGACCATGGTACATATCCTTTCGTAACTTCAAGTAACCCTGTTGCAGGTAATGTA
ACAGTTGGTACAGGTGTAGGCCCAACTTTCGTATCTAAAGTGATTGGTGTATGTAAAGCATATACATCTCGTGTA
GGCGATGGTCCATTCCCTACAGAATTATTTGATGAAAATGGACATCATATTAGAGAAGTTGGTCGTGAATACGGT
ACAACAACAGGACGTCCACGTCGTGTAGGTTGGTTTGACTCAGTTGTATTACGTCACTCTCGTCGTGTTAGTGGT
ATTACAGACTTATCTATTAACTCTATCGACGTACTTACAGGTCTTGATACAGTGAAGATTTGTACTGCTTACGAA
TTAGATGGAGAAGAAATTACAGAATATCCTGCTAACTTAGATCAATTACGTCGTTGTAAACCAATCTTTGAAGAG
TTACCAGGATGGGAAGAAGATATCACTGGTTGCCGTACATTAGAAGAATTACCAGATAACGCACGTAAATACTTA
GAACGCATTTCTGAATTATGTAATGTACGTATTTCAATCTTCTCAGT

39. *Staphylococcus saprophyticus* (SEQ ID NO. 39) SSAP

GCAAGGTGTGATGTTAGATATCGACCATGGTACATATCCATTCGTTCATCAAGTAACCCAGTTGCAGGTAATGTG
ACTGTCGGTGGCGGTGTAGGTCCAACATTCGTCTCTAAAGTTATCGGTGTGTGTAAAGCCTATACATCACGTGTC
GGCGATGGTCCATTCCCAACAGAACTATTTGACGAAGATGGGCACCACATCCGTGAAGTAGGTCGTGAATACGGT
ACAACAACAGGACGTCCACGTCGTGTAGGTTGGTTCGACTCAGTTGTATTACGTCATTCTCGTCGTGCAAGTGGT
ATTACAGATTTATCTATTAACTCAATTGATGTATTAACAGGCCTTAAAGAAGTTAAAATCTGTACTGCTTATGAG
TTAGACGGTAAAGAAATTACGGAATACCCAGCTAACTTGAAAGACTTACAACGTTGTAAGCCAATTTTTGAAACA
TTACCAGGTTGGACAGAAGATGTGACAGGTTGTCGTTCATTAGAAGAATTACCTAATAATGCGCGTAGATACTTA
GAACGTATTTCTGAATTATGTGACGTGAAGATTTCAATCTTCTCAGTTGGCCC

40. *Bacillus subtilis* (SEQ ID NO. 40) BSUB

CTCAAGGGGTTATGCTTGATATTGACCAAGGGACATACCCGTTTGTCACTTCATCCAACCCGGTCGCCGGAGGGG
TGACGATCGGTTCAGGCGTAGGCCCGACAAAAATCCAGCACGTCGTCGGTGTATCTAAAGCGTACACAACCCGTG

TCGGTGACGGTCCTTTCCCGACTGAGCTGAAAGATGAAACCGGGGATCAAATCCGTGAAGTCGGACGCGAATACG
GCACAACGACAGGCCGTCCGCGCCGTGTCGGCTGGTTTGACAGCGTTGTTGTCCGCCATGCCCGCCGCGTCAGCG
GAATCACAGATCTTTCTCTGAACTCAATCGATGTGCTGACTGGCATTGAAACATTGAAAATCTGTGTCGCTTACC
GCTACAAAGGTGAAGTGATTGAAGAATTCCCGGCAAGTCTGAAAGCTCTCGCAGAGTGTGAACCGGTATATGAAG
AAATGCCTGGCTGGACGGAAGATATCACAGGCGCAAAAACATTAAGCGATCTTCCTGAAAATGCGCGCCATTATC
TGGAACGCGTGTCTCANCTGACAGGTATTCCGCTTTCTATTTTCTCAGTAGGTCCAGA

41. ***Listeria monocytogenes*** **(SEQ ID NO. 41)** **LMON**

TTTGGAAGGGGCGCAAGGGGTTATGCTTGATATTGATCAAGGAACATATCCATTTGTAACTTCAAGTAACCCGAT
TGCTGGTGGCGTAACTATCGGTAGTGGTGTTGGTCCTTCAAAAATCAATCATGTTGTTGGTGTGGCGAAAGCTTA
TACAACACGTGTTGGTGATGGTCCTTTCCCAACAGAATTATTTGATTCTATTGGTGACACTATTCGTGAAGTCGG
TCATGAATATGGTACAACGACTGGTCGTCCGCGTCGTGTAGGTTGGTTTGATAGCGTAGTGGTTCGTCATGCGCG
TCGTGTTAGTGGATTAACAGATTTATCGTTAACACTACTTGATGTTTTGACAGGAATTGAGACACTTAAAATCTG
TGTAGCTTACAAATTAGACGGAAAAACAATTACAGAGTTCCCAGCAAGTTTGAAAGATTTAGCTCGTTGCGAACC
TGTTTATGAAGAACTTCCAGGCTGGACGGAAGATATTACTGGAGTTACATCACTAGATGATCTTCCAGTGAACTG
CCGCCATTACATGGAGCGTATCGCCCAACTTACGGGAGTGCAAGTTTCTATGTTCTCAGTAGGTCCCAGACCA

42. ***Lactococcus lactis*** **(SEQ ID NO. 42)** **LLAC**

TNATGCTTGATATTGACNAGGAACATACCCATTTGTAACTTCTCAAACCCAGTAGCTGGTGGGGTAACGATTGGC
TCTGGTGTGGGTCCATCAAAAATTTCAAAAGTTGTTGGTGTTTGTAAAGCCTATACTTCACGTGTGGGTGATGGT
CCATTCCCAACAGAACTTTTTGATGAAGTTGGACATCAAATTCGTGAAGTAGGACATGAATATGGAACAACAACA
GGACGTCCACGTCGTGTTGGTTGGTTTGACTCAGTCGTAATGCGTCATGCAAAACGTGTTTCTGGCTTGACAAAT
CTTAGCTTGAATTCAATTGACGTTCTCTCAGGACTTGAAACAGTAAAAATTTGTGTTGCTTACGAACGTAGTAAT
GGTGAACAAATTACTCATTATCCAGCATCACTTAAGGAATTAGCAGATTGCAAACCAATCTATGAAGAATTGCCA
GGATGGTCTGAAGATATTACTTCATGCCGAACTTTAGAAGAGTTACCAGAAGCTGCTCGTAACTATGTTCGTCGG
GTTGGTGAACTAGTTGGCGTACGTATCTCGACTTTCTCAGTNGTCCCC

43. ***Enterococcus hirae*** **(SEQ ID NO. 43)** **EHIR**

CTTTTTGAAGGGGCGCAAGGGGTAATGCTAGATATTGACCAAGGTACCTATCCATTTGTAACCTCATCTAATCCA
GTTGCTGGTGGTGTAACGATCGGTTCTGGTGTGGGTCCTAGCAAGATTGACAAAGTAGTGGGTGTTTGTAAAGCC
TATACAAGTCGTGTTGGTGATGGTCCTTTCCCAACAGAGCTTTTCGATGAAGTAGGTGACCGCATTCGTGAGGTT
GGTCATGAGTATGGTACAACAACAGGACGTCCGCGTCGAGTTGGTTGGTTTGACTCTGTTGTTATGCGCCATAGC
CGCCGTGTATCTGGGATTACCAATCTTTCGCTTAACTCTATCGATGTGTTGAGCGGTCTGGATACAGTCAAGATC
TGTGTAGCCTATGATTTGGATGGCCAAAGAATCGACCACTATCCAGCTAGTTTGGAACAGCTTAAACGTTGTAAG
CCGATTTACGAAGAGCTTCCTGGATGGTCTGAAGATATTACTGGCGTTCGTAAGTTAGAAGATCTTCCAGAAAAT
GCTCGCAACTATGTTCGGCGAGTAANCGAGTTGGTTGGTGTACGTATTTCCACCTTCTCAGTAGGTCCAGACCA

44. ***Enterococcus avium*** **(SEQ ID NO. 44)** **EAVI**

CTTTTCGAAGGTGCGCAAGGTGTAATGCTGGATATTGATCAAGGGACTTATCCATTTGTTACCTCTTCTAATCCG
GTTGCCGGCGGTGTCACGATCGGTAGCGGTGTTGGACCATCGAAGATTGATAAAGTCGTAGGGGTATGTAAAGCT

TATACATCACGCGTTGGTGATGGACCTTTTCCAACGGAATTATTTGACGAAGTCGGCGATCAGATCCGCGAAGTT
GGTCGTGAATATGGAACAACAACTGGCCGTCCACGTCGAGTTGGCTGGTTTGACTCTGTGGTTATGCGGCACTCA
AAACGCGCTTCTGGGATTACCAATCTATCTTTGAACTCAATCGATGTGTTGAGCGGCTTGGAAACGGTCAAGATT
TGTACCGCTTATGAGTTAGACGGAGAATTAATCTATCATTATCCAGCAAGCTTAAAGGAATTGAATCGCTGCAAA
CCAGTTTATGAAGAGCTACCTGGCTGGAGTAAGGATATTACTGGCTGTCGTGATT

45. *Streptococcus bovis* (SEQ ID NO. 45) SBOV

TTTTTGAAGGGGCTCAAGGTGTCATGCTTGATATTGACCAAGGTACATACCCATTTGTTACATCTTCAAACCCAG
TTGCTGGTGGTGTAACTATCGGTTCAGGTGTTGGTCCAAGCAAGATCAACAAAGTTGTTGGTGTATGTAAAGCCT
ACACAAGTCGTGTTGGTGATGGTCCATTCCCAACAGAACTTCTAGACGAAGTTGGAGATCGTATCCGTGAAATCG
GTCACGAATATGGTACAACAACAGGACGTCCACGTCGTGTTGGATGGTTTGACTCAGTTGTAATGCGTCACAGCC
GTCGCGTATCAGGTATCACAAACTTGTCACTTAACTCAATCGACGTTCTTTCAGGACTTGATACTGTTAAGGTCT
GTGTGGCTTACGACCTTGATGGCCAACGTATCGACCACTATCCAGCAAGTCTTGAACAATTGAAACGTTGTAAAC
CAATCTACGAAGAATTGCCAGGTTGGTCAGAAGACATCACAGGCTGCCGTAGCCTAGATGAGCTTCCAGAAAATG
CTCGTAACTATGTTCGTCGTGTTGGTGAACTTGTTGGTGTTCGCATTTCAACATTCTCAGTTGGTCCAGGCCA

46. *Streptococcus thermophilus* (SEQ ID NO. 46) STHE

CTATTTGAAGGTGCGCAAGGAGTTATGCTTGATATTGACCAAGGAACATACCCATTTGTAACGTCATCAAACCCA
GTTGCTGGTGGTGTTACAATTGGTTCTGGTGTTGGGCCATCTAAAATTAATAAGGTTGTGGGTGTATGTAAGGCC
TATACAAGTCGTGTCGGCGATGGTCCTTTCCGAACTGAGTTGTTTGATGAAGTGGGTGAACGTATCCGTGAAGTT
GGCCATGAATATGGAACAACAACTGGACGTCCACGTCGTGTGGGATGGTTTGACTCAGTGGTAATGCGTCATAGC
CGTCGTGTATCAGGTATTACAAACCTTAGCTTGAACTGTATCGACGTTCTTTCTGGTCTTGATACTGTGAAAATT
TGTGTAGCCTACGATCTTGATGGTGAGCGCATTGATTACTATCCGGCTAGCCTTGAGCAATTGAAACGTTGTAAA
CCAATTTATGAAGAATTGCCAGGTTGGGAAGAGGATATTACAGGTTGCCGTAGTTTANATGAGCTTCCTGAAAAT
GCCCGTAATTATGTTCGTCGTATTGGTGAGTTGGTCGGTATACNTATCTCTACCTTCTCAGTAGGCCNNACCA

47. *Streptococcus suis* (SEQ ID NO. 47) SSUI

CGAAGGACGCAAGGAGTTATGTTGGATATGACCAAGGTACCTATCCATTCGTTACTTCTTCAAACCCAGTTGCTG
GTGGTGTGACGATCGGTAGCGGTGTCGGCCCAAGCAAGATTGACAAGGTTGTTGGTGTATGTAAGGCCTACACTA
GCCGTGTTGGTGACGGACCATTTCCGACTGAATTGCACGATGAAATCGGAGACCGTATCCGCGAAATCGGTAAAG
AGTACGGTACGACAACTGGCCGTCCACGCCGTGTCGGTTGGTTTGACTCAGTGGTGATGCGCCATAGCCGCCGTG
TGTCAGGTATTACCAACTTGTCCCTCAACTCGATTGACGTCTTGTCAGGTCTTGGGACCTTGAAAATCTGCGTGG
CTTATGACTTGGATGGTGAGCGTATTGACCACTACCCAGCAAGTTTGGAGCAACTCAAACGTTGCAAACCAATCT
ACGAAGAAATGCCAGGTTGGTCTGAAGACATCACAGGTGTACGTAGCCTGGATGAATTGCCAGAAGCGGCTCGCA
ACTATGTTCGTCGTATCAGCGAATTGGTAGGCGTTCGTATCTCAACCTTCTCAGTAGGTCCAGACC

48. *Bacillus pseudomycoïdes* (SEQ ID NO. 48) BPMS

CTATTTGAAGGGGCGCAAGGCGTAATGCTTGATATTGATCAAGGTACGTATCCATTCGTTACATCTTCTAACCCA
GTTGCTGGTGGTGTAACAATCGGTTCTGGAGTTGGTCCTTCTAAAATCAATCGTGTAGTAGGCGTATGTAAAGCA
TATACAAGCCGTGTTGGTGACGGTCCATTCCCTACTGAACTTAATGATGAAATTGGCCATCAAATTCGTGAAGTT

GGTCGTGAATATGGTACAACAACAGGTCGTCCACGTCGCGTAGGTTGGTTTGACAGCGTTGTTGTAAGACATGCA
CGCCGTGTGAGTGGTTTAACAGATTTATCTTTAAACTCTATCGACGTATTAACAGGTATTCCAACTGTGAAAATC
TGTATTGCATATAAGTATAATGGAGAAGTTCTGGATGAAGTTCCAGCAAACTTAAACATTTTAGCAAAATGTGAG
CCTGTATATGAAGAGCTTCCAGGTTGGACAGAAGATATTACTGGTGTAAAATCATTAGAGGAGCTTCCTGAAAAT
GCAAGACATTATGTAGAGCGTGTGTCTCAATTAACAGGTATCCAATTATCTATGTTCTCAGTAGGGCCNGACCA

49. *Staphylococcus capitis capitis* (SEQ ID NO. 49) SCAPCAP

CTCTTCGAGGAGCTCAAGGTGTCATGTTAGACATCGACCATGGTACTTACCCATTCGTTACGTCAAGTAACCCAG
TTGCTGGTAATGTCACAGTAGGTACAGGTGTAGGTCCTACATCAGTTTCTAAAGTCATCGGTGTATGTAAATCAT
ATACGTCACGTGTAGGTGATGGTCCATTCCCCACAGAATTATTCGATGAAGATGGTCATCACATTAGAGAAGTAG
GTCGTGAATATGGTACAACAACAGGACGTCCACGCCGTGTAGGTTGGTTTGACTCAGTGGTACTACGTCATTCAC
GTCGCGTAAGTGGTATCACAGATCTTTCAATCAACTCTATCGACGTTTTAACAGGTTTAGATACAGTTAAAATTT
GTACAGCATATGAGTTAGATGGCGAAGAAATCACTGAATACCCAGCTAACTTAGATCAATTAAGACGCTGTAAAC
CAATCTTCGAAGAACTTCCAGGTTGGACAGAAGATATCACAGGGCTGCCGCAGTTTAGAAGAACTCCCTGAAAAT
GCNCNCCAAATACCTAGAGCGTATTTCAAAATTATGTGGCGTACNCATTTCAATCCTTCTCAGTAGGGGCCCTGA
CCCC

50. *Staphylococcus sciuri* (SEQ ID NO. 50) SSCI

CTTTTTGAAGGTGCGCAAGGTGTTATGTTAGATATCGACCACGGTACATATCCATTCGTTACTTCAAGTAATCCA
ATTGCAGGTAACGTTACAGTAGGTGGCGGTGTTGGTCCAACATACGTATCTAAAGTAATTGGTGTATGTAAAGCT
TATACATCTCGTGTAGGAGACGGTCCATTCCCAACAGAATTATTTGATGAAGATGGTCACCATATCCGTGAAGTA
GGTCGTGAATACGGTACAACAACTGGAAGACCACGTCGTGTAGGTTGGTTTGACTCAGTAGTTCTACGTCACTCA
CGCCGTGTAAGTGGTATTACAGATTTATCAATCAACTCAATTGACGTATTAACAGGATTAAAAACAGTTAAAATC
TGTACAGCATACGAAATTGATGGTGTTGAAATCACTGAATATCCAGCAAACTTAAACGAATTAGAACGTTGTAAA
CCAATCTTTGAAGAACTACCAGGTTGGGAAGAAGACATTACAGGATGCCGTTCACTAGAAGAATTACCAGATAAC
GCACGTCGTTTTTTAAAACGCATCTCTGAATTATGTANCGTTAAANTTCTATCTTCTCAGTAGGTCCAGGTC

51. *Staphylococcus warneri* (SEQ ID NO. 51) SWAR

CTTTTTGAAGGAGCGCAAGGTGTGATGTTAGACATCGACCACGGTACATATCCATTCGTCACTTCAAGTAACCCA
GTAGCAGGTAACGTTACTGTAGGTACTGGTGTAGGTCCAACATACGTATCAAAAGTCATTGGTGTATGTAAAGCT
TATACATCACGTGTTGGTGATGGTCCATTCCCTACAGAATTATTTGATGAAGATGGTCATCACATTAGAGAAGTT
GGTCGTGAATACGGTACAACAACTGGTCGTCCACGTCGTGTAGGTTGGTTCGACTCAGTAGTATTACGTCATTCA
CGCCGTGTAAGTGGTATTACAGACTTATCAATCAACTCAATTGATGTGTTAACTGGCTTAGATACAGTTAAAATC
TGTACAGCATATGAATTAGATGGTAAAGAAATTACTGAATATCCAGCTAACCTAGATCAATTACAACGTTGTAAA
CCAATCTTCGAAGAATTACCTGGTTGGACAGAAGATATTACAGGTTGCCGTACTTTAGAAGAGCTTCCTGAAAAT
GCACGCAAATATTTAGAACGTATTTCTGAATTATGTGGCGTACGTATTTCAATCTTCTCAGTTGGTCCTGGCCAG
GGCGA

52. *Staphylococcus lugdunensis* (SEQ ID NO. 52) SLUG

TTCTTTGAAGGAGCTCAAGGTGTTATGTTAGATATTGATCATGGTACATATCCTTTCGTCACATCAAGCAATCCT
GTAGCCGGCAATGTCACTGTTGGTACAGGTGTAGGTCCAACCTTCGTTTCTAAAGTAATTGGTGTGTGTAAAGCA
TACACATCTCGCGTAGGCGATGGTCCTTTCCCAACTGAACTATTTGATGAAGATGGGCACCATATTAGAGAGGTT
GGTCGTGAATATGGTACGACGACAGGACGTCCACGTCGCGTGGGTTGGTTTGATTCAGTCGTGCTACGTCACTCA
CGTCGTGTTAGTGGTATTACAGACTTATCTATTAACTCTATTGATGTACTAACAGGTTTAGATACGGTAAAAATT
TGTACAGCTTATGAGTTAGATGGAGAAGAAATTACGGAGTATCCAGCTAACCTTGATCAATTAAAACGTTGTAAA
CCAATCTTTGAAGAATTACCTGGTTGGACAGAAGATATTACAGGCTGTCGTTCATTAGAAGCATTGCCTGATAAT
GCACGTCGCTATTTAGAACGTATTTCAGAATTATGCGGCGTTCATATTTCAATTTTCTCAGTAGGGCCAGACCA

53. *Staphylococcus gallinarum* (SEQ ID NO. 53) SGAL

CTTTTTGAAGGTGCGCAAGGCGTTATGTTAGATATCGACCATGGTACATACCCATTTGTTACTTCTAGTAATCCA
GTTGCAGGTAACGTAACTGTAGGTGGCGGTGTTGGACCAACATTCGTATCAAAAGTAATTGGCGTATGTAAAGCC
TATACATCACGTGTTGGTGACGGCCCATTCCCAACTGAATTATTTGATGAAGATGGACATCATATCCGTGAAGTT
GGCCGCGAATATGGTACAACAACAGGACGTCCACGTCGTGTGGGTTGGTTTGACTCTGTTGTATTACGTCATTCA
CGCCGTGCAAGTGGTATCACAGATTTATCTATCAACTCTATTGACGTATTAACAGGTCTTGAAAATGTTAAGATT
TGTACTGCATACGAATTAGATGGAGAAGAAATCACTGAATACCCAGCAAACTTAAAGGACTTACAACGTTGTAAA
CCAATCTTTGAAACATTACCAGGTTGGACAGAAGATGTCACAAGCTGTCGTTCACTAGATGAATTACCAGATAAT
GCACGCAGATATTTAGAGCGCATTTCTGAACCATGTAACGTGAAGATTTCAATCTTCTCAGTAGGGCCAGACCA

54. *Staphylococcus schleiferi schleiferi* (SEQ ID NO. 54) SSCH

GACCTGGACCAACTGAGAAGATAGAAATATGGACGTTACATAATTCTGAAATACGCTCTAAGTAACGGCGTGCAT
TTTGTGGTAGTTCGTCTAAACTACGTACACCTGTAATATCTTCAGTCCAACCTGGTAATGTTTCAAAGATAGGTT
TACAACGTTTTAAGTCGTTTAAGTTTGCTGGGTATTCCGTAATCTCTTTTCCATCTAATTCATAAGCTGTACAGA
TTTTAACCTCTTCTAAGCCAGTTAAGACGTCGATAGAGTTGATTGATAAATCTGTAATCCCACTTACACGACGAG
AGTGACGTAATACAACGGAGTCAAACCAACCTACACGGCGTGGACGACCTGTTGTTGTGCCATATTCACGTCCGA
TTTCACGAATATGGTGCCCTTGTTCATCAAATAATTCTGTTGGGAATGGCCCATCACCTACACGTGAAGTGTATG
CTTTACATACGCCAACTACTTTTGATACATTTGTTGGCCCTACACCAGCACCAACTGTCACGTTACCCGCTACAG
GGTTACTTGATGTTACAAAAGGATATGTTCCGTGATCGATGTCTGACATCACCCCCTTGAGCCCCTTCAAAGAGA

55. *Staphylococcus capitis ureolyticus* (SEQ ID NO. 55) SCAPURE

GACCAGGCCCAACTGAGAAGATTGAAATGTGTACGCCACATAATTCTGAAATACGCTCTAGGTATTTGCGTGCAT
TTTCAGGGAGTTCTTCTAGACTGCGACAACCTGTGATATCTTCTGTCCAACCTGGAAGTTCTTCGAAGATTGGTT
TACAGCGTCTTAATTGATCTAAGTTAGCTGGGTATTCAGTGATTTCTTCGCCATCTAACTCATATGCTGTACAAA
TTTTAACTGTATCTAAACCTGTTAAAACGTCGATAGAGTTGATTGAAAGATCTGTGATACCACTTACGCGACGTG
AATGACGTAATACTACTGAGTCGAACCAACCTACACGGCGTGGACGTCCTGTTGTTGTACCATATTCACGACCTA
CTTCTCTAATGTGATGACCATCTTCATCGAATAATTCTGTAGGGAATGGACCATCACCTACACGTGACGTATATG
ATTTACATACACCGATGACTTTAGAAACTGATGTAGGACCTACACCTGTACCTACTGTGACATTACCAGCAACTG
GGTTACTTGACGTAACGAATGGATATGTACCGTGGTCGATGTCTAACATGACACCTTGCGCACCTTCAAATAAA

56. *Staphylococcus cohnii urealyticum* (SEQ ID NO. 56)
SCAPURE

CTCGTTGAAGGTGCACAAGGCGTTATGTTAGATATCGACCACGGTACATACCCATTCGTTACGTCAAGTAACCCA
GTTGCAGGTAATGTCACTGTCGGTGGTGGTGTTGGTCCAACATACGTATCTAAAGTCATTGGCGTATGTAAAGCT
TATACATCACGTGTCGGTGATGGCCCATTCCCAACAGAACTATTTGATGATGATGGACACCACATCCGTGAAATT
GGCCGTGAGTACGGTACAACTACTGGACGTCCACGTCGTGTAGGTTGGTTCGATTCAGTTGTATTACGTCACTCT
CGTCGTGCGAGTGGTATTACTGATTTATCAATCAACTCTATCGATGTCTTAACAGGCCTTAAAGAAGTGAAGATT
TGTACGGCGTATGAATTGGACGGTAAAGAAATTACTGAATATCCAGCGAATTTAAAAGACTTACAACGTTGTAAG
CCAATCTTTGAAACATTACCTGGTTGGACAGAAGATGTTACAGGTTGTCGCTCATTAGATGAGCTGCCAGACAAT
GCACGTAGATATTTAGAACGTATCTCTGAATTATGTGACGTTCAAATTTCAATCTTCTCAGTAGGGCCTGACCA

57. *Staphylococcus xylosus* (SEQ ID NO. 57) SXYL
CTTTTTGAAGGTGCTCAAGGTGTAATGCTAGATATCGATCATGGTACTTACCCATTCGTTACTTCAAGTAACCCA
GTTGCCGGTAACGTTACTGTTGGTGGCGGTGTAGGTCCAACATTCGTATCTAAAGTCATTGGTGTATGTAAGGCA
TATACATCACGTGTAGGCGATGGTCCTTTCCCAACTGAACTATTTGATGATGACGGGCACCATATCCGTGAAGTA
GGTCGTGAATACGGTACAACTACAGGTCGTCCACGCCGTGTAGGTTGGTTCGATTCAGTTGTATTACGTCACTCT
CGCCGTGCGAGTGGTATTACAGACCTATCAATCAACTCTATTGATGTGTTAACAGGTCTAAAAGAAGTTAAAATC
TGTACTGCCTATGAGTTAGACGGTAAAGAAATCACTGAATATCCAGCAAACTTGAAAGACTTACAACGTTGTAAG
CCAATCTTTGAAACATTGCCTGGTTGGACAGAAGATGTAACTGGTTGTCAATCATTAGATGAATTACCTGATAAT
GCACGTAGATACTTAGAACGTATATCTGAACTAAGTGATGTTAAGATTTCTATCTTCTCAGTAGGGCCAGATCA

58. *Staphylococcus simulans* (SEQ ID NO. 58) SSIM
CTATTTGAAGGAGCGCAAGGGGTTATGTTAGACATCGACCATGGTACATACCCATTCGTTACATCAAGTAACCCG
ATTGCTGGTAACGTTACTGTCGGCGGCGGTATCGGACCAACATCAGTATCTAAAGTAATCGGTGTATGTAAAGCG
TATACGTCACGTGTAGGTGATGGTCCATTCCCTACTGAATTATTCGATGAAGATGGTCATCATATCCGTGAAGTA
GGTCGTGAATATGGTACAACTACAGGACGCCCACGTCGTGTCGGCTGGTTCGACTCAGTGGTATTACGTCATTCA
CGTCGTGTAAGTGGTATTACTGACTTATCTATCAACTCAATCGACGTTTTAACTGGTTTAGATACAGTTAAAATC
TGTGTTGCGTATGAGTTAGATGGTGAAGAAATCACTGAATACCCAGCAAACTTAAACGCGTTGAACCGTTGTAAA
CCAATTTACGAAGAATTACCAGGTTGGTCTGAAGATATTACAGGCGTACAATCATTAGAAGAATTACCAGATAAC
GCACGTCGTTACTTAGAACGTATTTCTGAGTTATGTAACGTAGGTATCTCAATCTTCTCAGTTGGTCCAGGTCA

59. *Staphylococcus cohnii cohnii* (SEQ ID NO. 59) SCOHCOH
TATTTGAAGGTGCACAAGGAGTAATGCTTGATATCGATCATGGTACTTATCCGTTCGTCACTTCAAGTAACCCGA
TTGCCGGTAACGTAACAGTTGGTACTGGTGTAGGTCCAACGTTTGTAGATAAAGTTGTTGGTGTATGTAAAGCTT
ACACATCACGTGTAGGGGATGGACCATTCCCAACTGAATTATTTGATGAAGATGGTCATCATATTCGTGAAGTGG
GTCGTGAATATGGAACGACTACAGGACGTCCACGTCGTGTAGGTTGGTTTGACTCTGTTGTATTACGCCATTCTC
GCCGTGCAAGTGGTATTACGGACTTGTCAATTAACTCTATTGACGTATTAACTGGTTTAGAAACTGTTAAGATTT
GTACAGCATATGAATTGGATGGAAAAGAGATTACAGAATATCCAGCGAATTTAAATGAACTAAATCGTTGTAAAC
CGATTTTCGAAGAATTACCAGGATGGACTGAAGATGTGACTTCATGTAAGTCATTAGACGAGCTACCTGATAACG
CACGCCGTTACTTAGAGCGTATTTCGGAGTTATGTAATGTTAAGATTTCTATCTTCTCAGTAGGTCCAGACCA

60. *Staphylococcus auricularis* (SEQ ID NO. 60) SAURICU

CTATTTGAAGGAGCTCAAGGTGTGATGTTAGATATCGACCATGGTACGTACCCATTTGTTACATCTAGTAACCCT
GTTGCTGGTAACGTGACAGTGGGTGCAGGTGTAGGTCCAACGTTTGTCTCTAAAGTGATTGGTGTATGTAAAGCC
TATACATCACGTGTCGGTGATGGTCCATTCCCAACTGAATTATTTGATGATGATGGTCACCACATCCGTGAAGTC
GGACATGAATACGGTACAACAACAGGACGCCCAAGACGTGTCGGTTGGTTCGACTCTGTGGTATTACGTCACTCT
CGCCGTGTGAGCGGTATTACAGACCTTTCTATTAACTCTATTGATGTGTTAACTGGTTTANATACAGTTAAAATT
TGTACCGCATACGAATTAGATGGGGAAGAAATTACAGAGTACCCAGCAAACTTAAACGATCTAAAACGCTGCAAA
CCAATCTTTGAAGAACTTCCAGGTTGGAACGAANATATTACAGGTTGCCGCAGCTTAGAAGAATTACCTGACAAT
GCACGTCACTACTTANAACGCATTGCANAACTTTGTGACGTAAACATTTCAATCTTCTCAGTTGGGCCAGACCA

61. *Staphylococcus caseolyticus* (SEQ ID NO. 61) SCAS

CTTTTCGAAGGGGCGCAAGGAGTAATGCTTGATATCGATCATGGTACTTATCCGTTCGTCACTTCAAGTAACCCG
ATTGCCGGTAACGTAACAGTTGGTACTGGTGTAGGTCCAACGTTTGTAGATAAAGTTGTTGGTGTATGTAAAGCT
TACACATCACGTGTAGGAGATGGACCATTCCCAACTGAATTATTTGATGAAGATGGTCATCATATTCGTGAAGTG
GGTCGTGAATATGGAACGACTACAGGACGTCCACGTCGTGTAGGTTGGTTTGACTCTGTTGTATTACGCCATTCT
CGCCGTGCAAGTGGTATTACGGACTTGTCAATTAACTCTATTGACGTATTAACTGGTTTAGAAACTGTTAAGATT
TGTACAGCATATGAATTGGATGGAAAAGAGATTACAGAATATCTAGCGAATTTAAATGAACTAAATCGTTGTAAA
CCGATTTTCGAAGAATTACCAGGATGGACTGAAGATGTGACTTCATGTAAGTCATTAGACGAGCTACCTGATAAC
GCACGCCGTTACTTAGAGCGTATTTCGGAGTTATGTAATGTTAAGATTTCTATCTTCTCAGTTGGTCCAGACCA

62. *Listeria innocua* (SEQ ID NO. 62) LINN

CTTTTCGAAGGAGCACAAGGGGTTATGCTTGATATTGATCAAGGAACATATCCATTTGTAACTTCAAGTAATCCG
ATTGCTGGTGGCGTAACAATTGGTAGCGGTGTTGGCCCATCGAAAATCAATCATGTTGTTGGTGTTGCAAAAGCA
TATACAACTCGTGTTGGAGATGGTCCTTTCCCAACTGAATTATTTGATTCTATTGGTGACACTATCCGTGAAGTT
GGCCATGAATATGGTACAACTACTGGTCGTCCGCGTCGTGTAGGTTGGTTTGATAGCGTGGTTGTTCGTCATGCT
CGTCGTGTGAGCGGACTAACAGGTTTATCCTTAACGCTACTGGACGTTTTGACAGGGATTGAAACACTTAAAATC
TGTGTAGCGTACAAGTTAGACGGAAAAACAATTACAGAATTCCCGGCAAGCTTGAAAGACTTAGCTCGTTGTGAA
CCTGTTTATGAAGAACTGCCTGGTTGGACAGAAGATATTACTGAAGTGCAATCATTAGATGACCTACCAGTAAGT
TGTCGTCATTACATGGAACGCATTGCTCAACTTACAGGTGTGCAAGTTTCTATGTTCTCAGTAGGGCCTGATCA

63. *Escherichia coli* K12 (SEQ ID NO. 63) ECOK12

CTATTTGAAGGGGCGCAAGGAAAAAGGATTGTCGATGCATAACGCCTCCGGATTGACTCTGGCTTAAAGCGTAGT
CAGTGGAGGAGATAACAAATTCATTTTTACAAAAACTTAAACATGAAGGGGGAGACGCTTTCTCCCCCTTAGTTT
TCAGGCCTTCTCAAGCATGGCGTGCTTCTGCAGGCTCTGGATACTCAGCGTTAAGCTCATCAGACAATTTTCAAG
CTTATCGGCGTTGACGGTAATAACAGTCGGGCAATCATGGTGCCCACTCATCAAACATACTGCGGCTGTCGCTAA
TGCTTCTTCAGCATGATGAAGAGCACTCCACTCTTCCTGATCCAGATGAAGATTCAACCGCAGCGATTTATCGTG
CAGTTCGCGATTCAGTTTAAAAAAGTTATCTCGTAGATGATTGCTTTCGCTGACGGACATGTATCCTTTTGCCTT
TCTCAGTTGGGCCAGACCA

Figure 5. Molecular marker II (ptsI) sequences amplified from Gram positive bacteria (SEQ ID NOs: 64-107; SEQ ID NOs: 109-111, SEQ ID NOs: 117-129, SEQ ID NO: 137, SEQ ID NOs 145-148), from some Gram-negative bacteria (SEQ ID NOs 108, 112-116, 130-136, 138-144) and from the fungi Cryptococcus neoformans (SEQ ID NO: 149).

64. ***Bacillus anthracis*** **1978 (SEQ ID NO. 64)**

ANTTNGGGCATGGGNCCNTCTTTATNAGCAGCATCGATAACCATTTTTACAAGACGTAAAATAGATAGGTTATAT
GGTTGGTATAAGTAAGATACTTGTTCGTTCATACGGTCTGCAGCCATTGTGTATTGAATTAAGTCATTTGTTCCG
ATAGAGAAGAAATCAACTTCTTTTGCGAATTGATCTGCTAATACTGCTGAAGCTGGGATTTCAACCATCATACCA
ACTTCAATAGAATCAGAAACAGTTGTACCCACTTCTACAAGTTTCGCTTTTTCTTCTAATAAGATCGCTTTTGCT
TGACGGAACTCATCAAGAGTTGCAATCATTGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAAT
GCACGAAGTTGTGTACGGAACACATCTTGCTCATCAAGACATAAGCGAATTGCACGGTAGCCCANGAACGGATNT
TTTTCTTTAA

65. ***Bacillus anthracis*** **butare (SEQ ID NO. 65)**

NCTTGGCAGGGCCNTCTTNATNAGCAGCATCGATAACCATTTTTACAAGACGTAAAATAGATAGGTTATATGGTT
GGTATAAGTAAGATACTTGTTCGTTCATACGGTCTGCAGCCATTGTGTATTGAATTAAGTCATTTGTTCCGATAG
AGAAGAAATCAACTTCTTTTGCGAATTGATCTGCTAATACTGCTGAAGCTGGGATTTCAACCATCATACCAACTT
CAATAGAATCAGAAACAGTTGTACCCACTTCTACAAGTTTCGCTTTTTCTTCTAATAAGATCGCTTTTGCTTGAC
GGAACTCATCAAGAGTTGCAATCATTGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCAC
GAAGTTGTGTACGGAACACATCTTGCTCATCAAGACATAAGCGAATTGCACGGTAGCCCAAGAACGGAT

66. ***Bacillus anthracis*** **sterne (SEQ ID NO. 66)**

ACTGCGCATNNGCCTTCTTTATGAGCAGCATCGATAACCATTTTTACAAGACGTAAAATAGATAGGTTATATGGT
TGGTATAAGTAAGATACTTGTTCGTTCATACGGTCTGCAGCCATTGTGTATTGAATTAAGTCATTTGTTCCGATA
GAGAAGAAATCAACTTCTTTTGCGAATTGATCTGCTAATACTGCTGAAGCTGGGATTTCAACCATCATACCAACT
TCAATAGAATCAGAAACAGTTGTACCCACTTCTACAAGTTTCGCTTTTTCTTCTAATAAGATCGCTTTTGCTTGA
CGGAACTCATCAAGAGTTGCAATCATTGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCA
CGAAGTTGTGTACGGAACACATCTTGCTCATCAAGACATAAGCGAATTGCACGGTAGCCCANGAACGGATNNTTT
NTCTTAA

67. ***Bacillus anthracis*** **1655H85 (SEQ ID NO. 67)**

NNCNNGCATGGGCCNTCTTTATNAGCAGCATCGATAACCATTTTTACAAGACGTAAAATAGATAGGTTATATGGT
TGGTATAAGTAAGATACTTGTTCGTTCATACGGTCTGCAGCCATTGTGTATTGAATTAAGTCATTTGTTCCGATA
GAGAAGAAATCAACTTCTTTTGCGAATTGATCTGCTAATACTGCTGAAGCTGGGATTTCAACCATCATACCAACT
TCAATAGAATCAGAAACAGTTGTACCCACTTCTACAAGTTTCGCTTTTTCTTCTAATAAGATCGCTTTTGCTTGA
CGGAACTCATCAAGAGTTGCAATCATTGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCA
CGAAGTTGTGTACGGAACACATCTTGCTCATCAAGACATAAGCGAATTGCACGGTAGCCCANGAACGGANCTTTT
TTCTTTA

68. ***Bacillus anthracis*** **Coda-Cerva (SEQ ID NO. 68)**

ANNTGGCATNGGNCTTCTTTATGAGCAGCATCGATAACCATTTTTACAAGACGTAAAATAGATAGGTTATATGGT
TGGTATAAGTAAGATACTTGTTCGTTCATACGGTCTGCAGCCATTGTGTATTGAATTAAGTCATTTGTTCCGATA
GAGAAGAAATCAACTTCTTTTGCGAATTGATCTGCTAATACTGCTGAAGCTGGGATTTCAACCATCATACCAACT
TCAATAGAATCAGAAACAGTTGTACCCACTTCTACAAGTTTCGCTTTTTCTTCTAATAAGATCGCTTTTGCTTGA
CGGAACTCATCAAGAGTTGCAATCATTGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCA
CGAAGTTGTGTACGGAACACATCTTGCTCATCAAGACATAAGCGAATTGCACGGTAGCCCANGAACGGATCNTTT
NTCTT

69. ***Bacillus anthracis*** **2054H82 (SEQ ID NO. 69)**

TTTNNGGCATGGCGCCNTCTTNATNAGCAGCATCGATAACCATTTTTACAAGACGTAAAATAGATAGGTTATATG
GTTGGTATAAGTAAGATACTTGTTCGTTCATACGGTCTGCAGCCATTGTGTATTGAATTAAGTCATTTGTTCCGA
TAGAGAAGAAATCAACTTCTTTTGCGAATTGATCTGCTAATACTGCTGAAGCTGGGATTTCAACCATCATACCAA
CTTCAATAGAATCAGAAACAGTTGTACCCACTTCTACAAGTTTCGCTTTTTCTTCTAATAAGATCGCTTTTGCTT
GACGGAACTCATCAAGAGTTGCAATCATTGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATG
CACGAAGTTGTGTACGGAACACATCTTGCTCATCAAGACATAAGCGAATTGCACGGTAGCCCAAGAACGGATCTT
TTTCTTTA

70. ***Bacillus cereus*** **ATCC 10987 (SEQ ID NO. 70)**

GCCTTCTTTATGAGCAGCATCGATAACCATTTTTACAAGACGTAAAATAGATGGGTTATATGGTTGGTATAAGTA
TGATACTTGTTCGTTCATACGGTCTGCAGCCATTGTGTATTGGATTAAATCATTTGTTCCGATAGAGAAGAAGTC
AACTTCTTTCGCGAATTGATCTGCTAATACTGCTGAAGCTGGGATTTCAACCATCATACCAACTTCAATAGAATC
AGAAACAGTTGTACCCGCTTCTACAAGTTTCGCTTTCTCTTCTAATAAAATCGCTTTCGCTTGACGGAACTCATC
AAGAGTTGCAATCATTGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCACGAAGTTGTGT
ACGGAACACATCTTGCTCATCAAGACATAAGCGAATTGCACGGTATCCCAAGAACGGATCATTCTCGTTA

71. ***Bacillus cereus*** **ATCC 14579 (SEQ ID NO. 71)**

CCATTTCCTTCTTTATGAGCAGCATCGATAACCATTTTTACAAGACGTAAAATAGATGGGTTATATGGTTGGTAT
AAGTATGATACTTGTTCGTTCATACGGTCTGCAGCCATTGTGTATTGGATTAAATCATTTGTTCCGATAGAGAAG
AAGTCAACTTCTTTCGCGAATTGATCTGCTAATACTGCTGAAGCTGGGATTTCAACCATCATACCAACTTCAATA
GAATCAGAAACAGTTGTACCCGCTTCTACAAGTTTCGCTTTCTCTTCTAATAAAATTGCTTTCGCTTGACGGAAC
TCATCAAGAGTTGCAATCATTGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCACGAAGT
TGTGTACGGAACACATCTTGCTCATCAAGACATAAGCGAATTGCACGATATCCCAAGAACGGA

72. ***Listeria monocytogenes*** **(SEQ ID NO. 72)**

GCCCTCTTTATGAGAAGCATCAATTACCATTTTTACTAAACGTAAGATGGATGGATTGTATGGTTGGTAAAGGTA
AGAAACGCGTTCGTTCATACGGTCCGCAGCCATTGTATACTGAATTAAGTCATTTGTTCCGATAGAGAAGAAATC
AACTTCTTTTGCAAATTGATCAGCAAGAACTGCAGCGGCAGGAATTTCAATCATAATTCCAAGTTCGATGGAATC
AGATACTTCTGTTCCAGCAGCTTTTAGTTTTGCTTTCTCATCTAGTAAAATATCACGTGCTTGACGGAATTCATT

TACTGTTGCAATCATCGGGAACATAATTTTTAAGTTACCATATACACTTGCGCGAAGTAAGGCGCGAAGTTGCGT
ACGGAATAATTCTTCATTCGCAAAACAAAGACGAATTGCGCGGAATCCCAAGAACGGATCNTTCTCCTTA

73. *Streptococcus pneumoniae* (SEQ ID NO. 73)

CGCGTGAGCTGCTTTGATCCATTGTTAATCAAGCGTAGGATTGATGGGTTGTATGGTTGGTAAAGGTATGAAACT
TGTTCGTTCATACGGTCTGCTGCCATTGTATATTGGATCAAGTCATTTGTACCAATTGAGAAGAAGTCAACTTCT
TTAGCAAATTGGTCTGCAAGCATAGCCGCTGCAGGAATCTCGATCATGATACCAACTTGAATGTTATCCGCAACT
GCAACACCTTCAGCAAGAAGGTTTGCTTTTTCTTCATCAAAGACTGCTTTCGCTGCACGGAATTCTTTCAAGAGC
GCAACCATTGGGAACATGATACGCAATTGACCGTGAACAGACGCACGAAGAAGAGCACGGATTTGTGTGCGGAAC
ATAGCATCTCCAGTCTCAGAGATAGAGATACGAAGAGCACGGAATCCNANGAACGGATCCTTTTTCNTA

74. *Streptococcus pyogenes* (SEQ ID NO. 74)

TGCGCTGCTTTGATACATTGTTGATCAAACGTAATATTGATGGGTTGTATGGTTGGTAAAGGTATGATACTTGTT
CGTTCATACGGTCTGCTGCCATAGTGTATTGGATAAGGTCGTTTGTTCCAATTGAGAAGAAATCAACTTCCTTAG
CAAATTGGTCTGCAAGCATAGCAGCTGCAGGAATCTCAATCATGATACCAACTTGGATGTCATCAGCAACCGCAA
CGCCTTCTGCAAGCAAGTTTGCTTTTTCTTCGTCAAAGACTGCTTTTGCAGCACGGAATTCTTTAAGAAGCGCAA
CCATTGGGAACATAATACGAAGTTGTCCGTGAACAGAGGCACGAAGAAGCGCACGCATTTGTGTGCGGAACATGG
CATCCCCAGTTTCAGAGATGGAAATACGAAGAGCACGGAAACCNAAGAACGGATCNTTTTNCCNTA

75. *Streptococcus agalactiae* (SEQ ID NO. 75)

GAGCAGCTTTGATAACGTTGTTAATCAAACGAAGGATTGATGGATTGTATGGTTGATAGAGGTATGAAACTTGCT
CATTCATACGGTCCGCAGCCATTGTGTATTGGATAAGATCATTAGTACCAATTGAGAAGAAATCAACTTCTTTTG
CAAATTGGTCTGCAAGCATAGCTGCCGCTGGGATTTCAATCATAATACCAACTTCAATGCCTTCAGCTACTGCTA
CACCGTCAGCTAACAAGTTCGCTTTCTCTTCTTCAAATATAGCTTTAGCAGCACGGAATTCTTTAAGCAAAGCAA
CCATTGGGAACATGATGCGTAGCTGTCCATGAACTGAAGCACGAAGAAGTGCTCGGATTTGTGTGCGGAACATTG
CATCACCAGTTTCAGAAATTGAAATACGCAATGCACGGAATCCCAAGAACGGATCNTTTTTCNTA

76. *Streptococcus mutans* (SEQ ID NO. 76)

TGAGCAGCCTTAACCCATGATCAACCAAGCGAAGAATGGATGGATTATAAGGTTGGTAGAGGTATGATACTTGTT
CATTCATACGGTCAGCAGCCATGGTGTATTGAATAAGGTCATTTGTACCGATTGAGAAGAAATCAACTTCCTTAG
CAAATTGGTCAGCCAACATTGCAGCTGCAGGAATTTCAATCATGATACCAACTTGGATATCATCTGAAACAGCAA
CGCCTTCAGCTTTAAGATTAGCCTTTTCTTCTTCCAGAATACCTTTAGCTTTACGGAACTCATTGAGCAAAGCTA
CCATTGGGAACATGATACGCAACTGACCATGAACAGAAGCACGCAAAAGGGCACGCAACTGTGTGCGGAACATCT
GATTGCCTGTTTCTGAGATTGAAATACGAAGTGCACGAAAACCAAAGAACGGATCATTCTCTTA

77. *Enterococcus faecalis* (SEQ ID NO. 77)

CGTCGTGTGCTGCATCAATTACATTTTTAATTAAACGTAAGATTGATGGGTTGTATGGTTGGTATAAGTAAGAAA
CGCGTTCGTTCATACGGTCTGCCGCCATTGTGTATTGGATTAAGTCGTTGGTTCCAACACTAAAGAAGTCTACTT
CTTTGGCAAATTTATCAGCTAATACGGCAGCTGCTGGAATTTCAATCATAATACCTACTTGGATATCGTTTGAAA
CTTCAACACCTTCGTTGACTAATTTTTGTTTTTCGTCTTCAAAGATTGCTTTCGCTGCTCTAAATTCTTTCAAAG

TAGCAACCATTGGGAACATGATACGTAAGTTACCATGAACAGACGCACGTAATAATGCACGCATTTGTGTACGGA
ACATGCCGTCACCTAGTTCTGATAAGCTAATACGTAATGCACGGTAACCCAAGAACGGATNATTCTCGTA

78. *Staphylococcus aureus* (SEQ ID NO. 78) SAUR

NNCCCNTCTTATGTGACGCTTCAATAACTTGTTTAACTAAACGTAAGATTGAAGGGTTATATGGTTGGTATAGAT
ATGATACACGCTCTGACATACGGTCAGCAGCTAATGTGTATTGAATTAAATCATTTGTACCGATACTGAAGAAAT
CTACTTCTTTAGCAAAGACATCAGCTAATGCTGCTGTTGCAGGTATCTCTACCATGATTCCTAATTCTATATCAT
CCGAAATGTCATGACCTTCATTTTTAAGGTTTTCTTTTTCTTCTAATAATATAGCTTTTGCTTCTCTAAATTCGT
TAATTGTTGCAACCATTGGGAACATGATATTTAACTTACCATAAACTGATGCACGTAATAATGCACGTAGCTGTG
GTCTGAAAATATCTTGTTGCGCAAGGCATAAACGAATCGCACGGTAACCCAAGAACGGATCCNTTNTCCTTAA

79. *Staphylococcus epidermidis* (SEQ ID NO. 79) SEPI

CTTCTTTATGAGAAGCTTCAATAACTTGTTTAACTAATCGTAAAATTGAAGGATTATATGGTTGATATAAGTATG
AAACTCGTTCAGACATACGGTCAGCAGCTAATGTGTATTGAATTAAGTCATTCGTTCCTATACTAAAGAAATCTA
CTTCTTTAGCAAATACATCAGCAAGTGCCGCGGTAGCTGGAATTTCAACCATAATACCTAATTCAATATCATCTG
AAACTTCGTAACCTTCGCGAAGAAGATTTTCTTTCTCTTCAAGAAGCATTGATTTAGCGTCACGGAATTCTTTAA
TTGTTGCTACCATTGGGAACATAATATTCAATTTCCCATAGACTGAAGCACGTAGTAATGCACGTAATTGTGGTC
TAAAGATTTCCGGCTGTGCTAAACATAAACGTATCGCACGATAACCCAAGAACGGATCNTTCTNCGTA

80. *Bacillus thuringiensis* serovar *israelensis* (SEQ ID NO. 80) BTHUISR

CTTTATGAGCAGCATCGATAACCATTTTTACAAGACGTAAAATAGATGGGTTATATGGTTGGTATAAGTATGATA
CTTGTTCGTTCATACGGTCTGCAGCCATTGTGTATTGGATTAAATCATTCGTTCCGATAGAGAAGAAATCAACTT
CTTTCGCGAATTGATCTGCTAATACTGCTGAAGCTGGGATTTCAACCATCATACCAACTTCAATAGAATCAGAAA
CAGTTGTACCCGCTTCTACAAGTTTCGCTTTCTCTTCTAATAAAATCGCTTTCGCTTGACGGAACTCATCAAGAG
TTGCAATCATTGGGAACATAATTTTTAAGTTGCCGTATACGCTAGCACGAAGTAATGCACGAAGTTGTGTACGGA
ACACATCTTGCTCATCAAGACATAAGCGAATTGCACGGTATCCCAAGAACGGATCATTCTCNTTA

81. *Bacillus thuringiensis* serovar *kurstaki* (SEQ ID NO. 81) BTHUKUR

GCCATTTTCCTTCTTTATGAGCAGCATCGATAACCATTTTTACAAGGCGTAAAATAGATGGATTATACGGTTGGT
ATAAGTAAGATACACGTTCATTCATACGGTCTGCAGCCATTGTGTATTGGATTAGGTCGTTTGTTCCGATAGAGA
AGAAATCAACTTCTTTTGCAAACTGATCTGCTAATACTGCAGAAGCGGGAATTTCTACCATCATACCTACCTCAA
TAGCATCAGAAACAGTTGTACCAGCTTGAACAAGTCTTTCTTTCTCTTCTAATAAAATTGCTTTTGCTTGACGGA
ATTCATCAAGAGTTGCAATCATTGGGAACATAATTTTTAAATTACCATATACGCTTGCACGAAGCAATGCACGAA
GTTGTGTACGGAACACATCTTGTTCTTCAAGGCATAAGCGAATCGCACGGTAACCCAAGAACGGA

82. *Staphylococcus hominis* (SEQ ID NO. 82) SHOM

CNCCNNCCTTATGAGGAAGCTTCAATAACCTGTTTAACTAAACGTAAAATTGCTGGATTATATGGTTGATATAAA
TATGAAACACGTTCAGACATACGATCAGCTGCCATAGTATATTGAATTAAGTCATTAGTTCCTATACTAAAGAAA

TCTACTTCTTTAGCAAAGATATCAGCTAACGCAGCAGTAGAAGGAATCTCTACCATGATACCTACTTCGATATCA
TCAGCAACTTCTTGTCCTTCGCTAGTTAATTTATCTTTTTCTTCTAAAAGAATAGCTTTAGCATCTCTAAACTCT
TTAATAGTAGCTACCATTGGGAACATAATATTTAATTTACCATAAGCAGATGCGCGTAATAACGCACGTAATTGT
GTTCTGAAGATGTCTTGTTGATCTAAGCACAAACGAATTGCACGATAACCCANGAACGGATTCATNTCNTA

83. *Enterococcus faecium* (SEQ ID NO. 83) EFCM

CGCGTGTGCTGCATCAATTACATTTTTGATCAAACGTAAAATTGATGGGTTATATGGTTGGTACAAGTAAGAAAC
GCGTTCGTTCATACGGTCTGCTGCCATTGTGTATTGAATCAAATCGTTCGTACCTACAGAGAAGAAATCTACTTC
TTTTGCAAACTTGTCTGCTAAGACTGCTGCTGCTGGAATCTCGATCATGATGCCGACTTGGATCGTATCAGATAC
TTCCTTGCCTTCACTGATCAATTTTTGTTTTTCTTCTTCAAAGATCGCTTTTGCTGCGCGGAATTCTTTGAGTGT
AGCTACCATAGGGAACATGATACGTAAGTTACCATGAACAGATGCACGAAGCAATGCACGCATTTGTGTACGGAA
CATTTCGTCGCCTTGTTCAGATAAACTGATACGCAATGCACGATATCCCAAGAACGGATCATTCTCCTTA

84. *Clostridium perfringens* (SEQ ID NO. 84) CPER

CNTGTTTGTGAGCTCCATCTATTGTCATTTTGATTAATCTTAATACAGCTGGATGCATTGGATTGTAAAGGTATG
ATACCTTTTCACTCATTCTGTCAGCAGCTAATGTATATTGTATTAAATCGTTAGTTCCTATTGAGAAGAAATCAA
CATGCTTAGCTAATTCATCAGCATAAACTGCTGCAGCTGGGATTTCAACCATGATACCCCATTGAATTGAATCTG
AGTATGCTATACCTTCTGCTTTTAACTCAGCTTTGCATTCTTCAACAAATGCTTTAGCTTGTTGGAATTCTTCTA
ATCCTGAAATCATTGGGAACATTACTGCAAGATTTCCATAAACAGAAGCTCTTAATAAAGCTCTTATTTGAACTC
TAAAGATATCTTTTCTGTCTAAGCATAATCTTATAGCTCTGTATCCCAAGAACGGATCNNTNNTCNTTAA

85. *Bacillus mycoïdes* MYC003 (SEQ ID NO. 85) BMYC003

CTTTATGAGCAGCATCGATCACCATTTTTACAAGACGTAAAATTGATGGGTTATATGGTTGGTATAAGTAAGATA
CACGTTCGTTCATACGGTCTGCAGCCATTGTGTATTGGATTAAGTCATTTGTTCCGATAGAGAAGAAATCGACTT
CTTTTGCGAATTGATCTGCTAATACTGCTGAAGCTGGAATTTCAACCATCATACCAACTTCAATAGAATCAGAAA
CAGTTGTACCCGCTTGGACAAGTCTTTCTTTCTCTTCTAATAAAATCGCTTTCGCTTGACGGAATTCATCAAGAG
TTGCAATCATCGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCACGAAGTTGTGTACGGA
ACACATCTTGTTCTTCAAGGCATAAGCGAATTGCACGGTATCCCAAGAACGGATCNTTCTCNTTA

86. *Bacillus mycoïdes* NRS306 (SEQ ID NO. 86) BMYC306

GCCATTTTCCTTCTTTATGAGCAGCATCGATAACCATTTTTACAAGACGTAAAATAGATGGGTTATATGGTTGGT
ATAAGTAAGCTACTTGTTCGTTCATACGGTCCGCAGCCATTGTGTATTGGATTAAATCATTTGTTCCGATAGAGA
AGAAATCAACTTCTTTTGCGAATTGATCTGCTAATACTGCAGAAGCTGGAATTTCAACCATCATACCAACTTCAA
TAGAATCAGAAACAGTTGTACCCGCTTCTACAAGTTTTGCTTTCTCTTCTAATAAGATTGCTTTCGCTTGACGGA
ACTCATCAAGAGTTGCAATCATTGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCACGAA
GTTGTGTACGGAACACATCTTGCTCATCAAGACATAAGCGAATTGCACGGTATCCCAAGAACGGATCATTCTCTT
A

87. *Streptococcus oralis* (SEQ ID NO. 87) SORA

CNNTTTCCCTTCGCGTGAGCTGCTTTGATAACGTTGTTGATCAGCGTAGGATTGATGGGTTGTATGGTTGGTAAA
GGTATGAAACTTGCTCGTTCATACGGTCTGCTGCCATTGTGTATTGGATCAAGTCGTTTGTACCAATTGAGAAGA
AGTCAACTTCTTTAGCAAATTGGTCTGCAAGCATTGCTGCTGCAGGAATTTCGATCATGATACCAACTTGGATAT
TATCCGCAACTGCAACACCTTCAGCAAGAAGGTTTGCTTTTTCTTCGTCAAAGACTGCTTTCGCTGCACGGAATT
CTTTCAAGAGCGCAACCATTGGGAACATGATACGTAATTGACCGTGAACAGACGCACGAAGAAGAGCACGGATTT
GTGTGCGGAACATAGCATCTCCAGTCTCAGAGATAGAGATACGAAGAGCACGGAATCCNAAGAACGGATCNTTTC
TCTTA

88. *Enterococcus hirae* (SEQ ID NO. 88) EHIR

CNATTTACCTTCGCATGCGCTGCATCGATCACGTTTTTAATCAAACGTAGGATTGATGGGTTGTAAGGTTGATAC
AAGTATGAAACACGTTCGTTCATACGGTCAGCTGCCATAGTGTATTGGATCAAGTCATTCGTTCCTACTGAGAAG
AAGTCAACTTCCTTAGCAAACTTGTCAGCTAAGACAGCTGCTGCTGGAATTTCGATCATGATGCCGACTTGGATC
GTATCAGATACTTCCACGCCTTCATTCAATAATTTTTGTTTTTCGTCTTCAAAGATTGCTTTTGCAGCACGGAAT
TCTTTAAGAGTCGCTACCATTGGGAACATGATACGTAAGTTTCCATGAACAGATGCACGTAATAATGCGCGCATT
TGCGTACGGAACATTTCGTCACCTTGTTCTGACAAGCTGATTCGTAATGCACGATAGCCCAAGAACGGATCNTTN
TCCTTA

89. *Enterococcus avium* (SEQ ID NO. 89) EAVI

CNATTTNCCTTCGCGTGCGCTGCATCAATCACGTTTTTGATTAAGCGTAGAATTGATGGGTTATATGGTTGGTAA
AGGTAAGAAACGCGTTCGTTCATACGGTCAGCTGCCATCGTGTATTGAATTAAGTCATTTGTTCCGATACTGAAG
AAATCAACTTCTTTGGCAAACTTGTCAGCTAGTACAGCTGCAGCTGGAATTTCGATCATGATTCCGACTTGGATC
GTATCAGAAACTTCCACGCCTTCTTTAACCAATTTTTCTTTTTCTTCGTTGAACATTTTCTTCGCTGCACGGAAT
TCTTTTAATGTCGCAACCATTGGGAACATGATGCGTAAGTTACCATGAACAGAAGCGCGCAACAATGCACGTAAT
TGTGTACGGAACATGTCATCGCCTAGTTCGGATAGACTAATACGCAATGCACGATAACCCAAGAACGGATCNTTT
TTCTTAA

90. *Staphylococcus saprophyticus* (SEQ ID NO. 90) SSAP

TCGTAAGAAGCTTCTATTACTTGTTTTACTAAACGTAATATTGAAGGATTATATGGTTGATACAAGTAAGAAACA
CGTTCTGACATTCTATCAGCAGCCATTGTATATTGAATTAAATCATTCGTTCCTATACTGAAGAAATCAACTTCT
TTAGCAAATACATCTGCCAACGCAGCAGTAGAAGGAATTTCTACCATAATACCAAGTTCGATATCATCAGAAACT
TCAATGCCTTCATTTGTTAAGTTATCTTTTTCTTCAAGTAACAATGCTTTAGCATCACGGAACTCTTGGATTGTA
GCTACCATAGGGAACATGATATTCAATTTACCAAAAGCAGATGCACGTAATAATGCACGCAACTGTGGTCTGAAA
ATATCAGGTTGATCTAGGCATAAACGGATAGCACGGTAACCCAAGAACGGATCATTCTCTTA

91. *Staphylococcus haemolyticus* (SEQ ID NO. 91) SHAE

GAAGCTTCATGACTTGTTTAACCAAGCGTAAAATAGCTGGGTTATAAGGTTGGTATAAGTATGAAACGCGTTCTG
ACATACGGTCAGCTGCCATAGTATATTGAATTAAATCATTAGTACCAATACTGAAGAAATCCATTTCTTTAGCAA
AGATATCAGCTAAAGCAGCTGTAGATGGAATCTCAACCATGATACCTAACTCAATTTCATCAGAAACGTCATGAC
CATCATTTTTAAGATTTTCTTTTTCTTCTAACAGAATGGCTTTAGCATCACGGAATTCATTGATTGTAGCTACCA

TTGGGAACATAATGTTTAATTTACCGTAAGCTGACGCGCGTAATAATGCACGTAATTGTGTTCTGAAAATATCTT
GTTGATCTAAGCATAGACGAATTGCTCTGTAACCCAAGAACGGNTCNTTCTCTTA

92. *Enterococcus flavescens* (SEQ ID NO. 92) EFLA

NGCATGCGCTGAGTCGATCACGTTTTTGATCAAACGTAAAATTGATGGGTTGTATGGTTGGTACAAGTAAGACAC
GCGCTCGTTCATGCGGTCTGCAGCCATTGTGTATTGGATCAAGTCATTGGTACCAATACTGAAGAAGTCAACTTC
CTTCGCAAACTTGTCTGCTAAGACAGCAGCTGCTGGAATTTCGATCATGATTCCGACTTGGATCTCGTTAGAAAC
CTCAACGCCTTCGTCAATCAATTTTTGACGCTCTTCTTCATACATTTTCTTCGCAGTACGGAACTCTTTCAATGT
TGCCACCATTGGGAACATGATACGTAAGTTGCCGTGAGCAGAAGCACGTAACAACGCACGAAGTTGGGTACGGAA
CATGTCATCCCCAAGTTCAGATAAGCTGATACGCAATGCACGATAGCCCAAGAACGGATATTNNTCNTA

93. *Enterococcus casseliflavus* (SEQ ID NO. 93) ECAS

GCGCTGAGTCGATACGTTTTTGATCAAACGTAAAATTGATGGGTTGTATGGTTGGTACAAGTAAGACACGCGCTC
GTTCATGCGGTCTGCAGCCATGGTGTATTGGATCAAGTCATTGGTACCAATACTGAAGAAGTCAACTTCCTTCGC
AAACTTGTCTGCTAAGACAGCAGCTGCTGGAATTTCGATCATGATTCCGACTTGGATCTCGTTAGAAACCTCAAC
GCCTTCGTCAATCAATTTTTGACGCTCTTCTTCATACATTTTCTTCGCAGTACGGAACTCTTTCAATGTTGCCAC
CATTGGGAACATGATACGTAAGTTGCCGTGAGCAGAAGCACGTAACAACGCACGAAGTTGGGTACGGAACATGTC
ATCCCCAAGTTCAGATAAGCTGATACGCAATGCACGATAGCCCAAGAACGGATNATTTNTCTTA

94. *Enterococcus gallinarum* (SEQ ID NO. 94) EGAL

ACCTTNGCATGTGCTGAATCGATTACGTTTTTGATCAACGTAGAATAGATGGGTTATATGGTTGGTAAAGATATG
AAACTTGTTCATTCATACGGTCTGCAGCCATTGTGTATTGGATCAAGTCATTGGTACCAATACTGAAGAAGTCTA
CTTCCTTGGCAAATTTGTCAGCTAAGACAGCTGCTGCAGGAATTTCGATCATGATACCTACTTGAATATCTTCAG
AGACGGTTACGCCTTCATCGATCAATTTTTGACGTTCTTCTTCGTACATTTTTTTCGCAGCACGGAACTCTTTCA
ATGTTGCCACCATTGGGAACATAATCCGCAAGTTTCCGTGAGCAGAAGCACGTAACAGCGCACGAAGTTGTGTAC
GGAACATGCCGTCACCCAACTCAGACAAACTGATACGCAATGCACGATAGCCCAAGAACGGATCTTTNTCCNTTA

95. *Enterococcus raffinosus* (SEQ ID NO. 95) ERAF

NTGTGCTGCATCAATGACGTTTTTAATCAAACGTAAGATTGATGGGTTATATGGTTGATACAGGTATGAAACGCG
TTCGTTCATACGGTCAGCAGCCATTGTGTATTGAATCAAGTCGTTTGTTCCGATACTAAAGAAGTCAACTTCTTT
TGCAAACTTGTCAGCTAGAACAGCTGCGGCAGGGATCTCGATCATGATTCCGACTTGAATCGTATCAGAAACCTT
CACGCCTTCGTTAACAAGCTTTTCTTTTTCTTCGTTGAACATTTTCTTCGCTGCACGGAACTCTTTTAATGTTGC
AACCATTGGGAACATGATGCGTAAATTGCCATGAACTGAAGCGCGTAACAATGCACGTAACTGTGTACGGAACAT
ATCGTCGCCTAATTCAGATAAACTGATACGCAATGCACGATAACCCAAGAACGGATNNTTCTNCGTAA

96. *Enterococcus villorum* (SEQ ID NO. 96) EVIL

GGNCTCTCGTCGTNAGCTGCATCAATCACGTTTTTGATTAAACGTAAAATTGATGGGTTATAAGGTTGGTATAAG
TATGAAACGCGTTCGTTCATACGGTCAGCTGCCATAGTGTATTGAATCAAATCATTTGTTCCTACTGAGAAGAAG
TCAACTTCCTTCGCAAACTTGTCAGCTAAAACAGCAGCTGCAGGAATTTCAATCATAATGCCGACTTGGATCGTA
TCAGATACTTCCACGCCTTCATTCAATAACTTTTGTTTTTCATCTTCAAAGATTGCTTTTGCCCCACGGAATTCT

TTAAGTGTCGCCACCATTGGGAACATGATACGTAAGTTACCGTGAACGGATGCACGCAATAACGCACGCATTTGT
GTACGGAACATTTCGTCTCCTTGTTCAGAAAGACTGATACGTAATGCACGATATCCNANGAACGGNTTATTTTTC
NTA

97. *Clostridium difficile* (SEQ ID NO. 97) CDIF

TTTNNGGANGGCNTCTNTCGTANGCATTGTCTATANCAGTCTTTATAAGTCTTAAAACAGCTGGATNAAATTGAT
TGTAAAGNTAACTTATCTTTTGATTCATTCTATCAACTGCACAAGTGTATTGAATTAAATCATTAGTTCCTATAG
AGAAGAAATCTACGTGTTTAGCCAATACATCAGATATCACAGCAGCAGATGGAACTTCTATCATCATACCAATTT
CTACATCTTTAGCATAAGCCACACCTTCAGAATCAAGTTCTGCTAAAACTTCTTTTACAACTTCTTTAGCTTGTA
ACAACTCTTCTAAAGATGAAATCATTGGGAACATGATTCTTAATCTTCCATGAACACTAGCTCTATATAAAGCTC
TCAATTGAGTCTTAAATATATCTTTTCTATCTAGGCAAAGTCTTATTGCTCTGTAACCCAAGAACGG

98. *Streptococcus mitis* (SEQ ID NO. 98) SMIT

NGCGTGAGCTGCCTTGATAACGTTGTTGATCAAGCGAAGGATTGATGGGTTATATGGTTGGTAAAGGTATGAAAC
TTGCTCGTTCATACGGTCTGCTGCCATTGAGTATTGGATCAAGTCGTTTGTTCCAATTGACATGAAGTCTACTTC
TTTTGCAAATTGGTCTGCAAGCATCGCTGCTGCAGGGATTTCAATCATGATACCAACTTGGATATCATCCGCAAC
TGCAACACCTTCAGCAAGAAGGTTTGCCTTTTCTTCTTCATAAACTGCTTTGGCTGCACGGAATTCTTTCAAAAG
AGCAACCATTGGGAACATGATACGCAATTGACCATGAACAGAAGCACGAAGAAGAGCACGGATTTGTGTACGGAA
CATTGCATCTCCAGTTTCAGAAATAGAGATACGAAGGGCACGGAATCCNAAGAACGGATATTTTTCNTA

99. *Bacillus halodurans* (SEQ ID NO. 99) BHAL

NCCTTCGCTATGAGCTGCTTTAATAACCATATCGACGAGGCGTAAAATCGCAGGGTGGTATGGCTGATACAGGTA
GGAGACTCGCTCATTCATGCGGTCAGCAGCCATCGTATATTGAATTAAGTCGTTCGTTCCGATACTGAAAAAGTC
TACTTCTTTTGCAAAAAGATTAGCCGCTACCGCCGTCGATGGGATTTCTACCATGATTCCCACTTCAATTGAATC
GGATACGTCCACTCCTTCACTAAGAAGCTTGTCTTTTTCCTCTTGCATGATCGCTTTTGCTTGGCGAAGCTCTTC
AAGGGTGGCGATCATTGGAAACATCACCTTTAAGTTACCGTATGTGCTTGCGCGAAGCAAGGCACGGAGTTGGGT
CCGGAAAATATCTTGTTTTTCAAGGCACAGACGAATCGCCCGGAAACCNAAGAACGGATNNTTNTTCNTAA

100. *Bacillus weihenstephanensis* (SEQ ID NO. 100) BWEI

NTGAGCAGCATCGATAACCATTTTTACAAGACGTAAAATAGATGGGTTATATGGTTGGTATAAGTAAGCTACTTG
TTCGTTCATACGGTCTGCAGCCATTGTGTATTGGATTAAGTCATTTGTTCCAATAGAGAAGAAATCAACTTCTTT
TGCGAACTGATCAGCTAATACTGCTGAAGCTGGAATTTCAACCATCATACCAACTTCAATAGAATCAGAAACAGT
TGTACCCGCTTTAACAAGTCTTTCTTTCTCTTCTAATAAGATTGCTTTCGCTTGACGGAACTCATCAAGAGTTGC
AATCATTGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCACGAAGTTGTGTACGGAACAC
ATCTTGCTCATCAAGACATAAGCGAATTGCACGGTATCCCAAGAACGGATCNTTCTCNTTA

101. *Streptococcus species* (SEQ ID NO. 101) SSPE

CNNANTTNCCTTCGCGTGAGCTGCTTTGATAACGTTGTTAATCAACGAAGGATTGATGGGTTGTATGGTTGGTAA
AGGTATGAAACTTGTTCGTTCATACGGTCAGCAGCCATTGTGTATTGGATAAGGTCGTTTGTTCCGATTGAGAAG
AAGTCAACTTCTTTCGCAAATTGGTCAGCAAGCATAGCTGCAGCTGGGATTTCAATCATGATACCAACTTGGATA

TCATCTGAAACGGCAACACCTTCAGCTTTAAGGTTTGCTTTTTCTTCATCAAAGATTGCTTTAGCAGCACGGAAT
TCTTTAAGAAGAGCAACCATTGGGAACATGATACGAAGTTGTCCGTGTACAGATGCACGAAGAAGTGCACGGATT
TGTGTACGGAACATTGCATTTCCTGTTTCTGAGATAGAAATACGAAGTGCACGGAATCCNAAGAACGGATCCTTT
TTCCTTAA

102. *Streptococcus gordonii* (SEQ ID NO. 102) SGOR

NTGCCTTCGCATGAGCCGCCTTGATAACATTGTTGATCAAGCGAAGGATAGATGGGTTATAAGGTTGATAGAGGT
AAGAGACTTGTTCATTCATCCGGTCAGCTGCCATAGTGTACTGGATCAAGTCGTTGGTACCAATTGAGAAGAAGT
CAACTTCCTTGGCAAATTGATCCGCCAACATAGCTGCTGCTGGAATTTCAATCATGATACCCACTTGAATGTTAT
CCGCTACAGCAACACCTTCAGCTTGCAATTTCGCTTTTTCTTCTTCGTAAACTGCTTTAGCCTTACGGAATTCTG
TTAGAAGGGCTACCATTGGGAACATGATACGTAATTGTCCATGTACAGACGCACGTAAGAGAGCGCGGATTTGTG
TACGGAACATAGCATTACCAGTTTCAGAGATAGAGATACGCAAAGCACGGAAGCCNAAGAACGGTCNTTTT

103. *Streptococcus canis* (SEQ ID NO. 103) SCAN

CNCGTGAGCTGCTTTGATAACGTTGTTAATCAAACGAAGGATTGATGGGTTGTATGGTTGGTAAAGGTATGAAAC
TTGTTCGTTCATACGGTCAGCAGCCATTGTGTATTGGATAAGGTCGTTTGTTCCGATTGAGAAGAAGTCAACTTC
TTTCGCAAATTGGTCAGCAAGCATAGCTGCAGCTGGGATTTCAATCATGATACCAACTTCGATATCATCTGAAAC
GGCAACACCTTCAGCTTTAAGGTTTGCTTTTTCTTCATCAAAGATTGCTTTAGCAGCACGGAATTCTTTAAGAAG
AGCAACCATTGGGAACATGATACGAAGTTGTCCGTGTACAGATGCACGAAGAAGTGCACGGATTTGTGTACGGAA
CATTGCATTTCCTGTTTCTGAGATAGAAATACGAAGTGCACGGAATCCNAAGAACGGTCNTTTTTCTCTAA

104. *Bacillus pumilus* (SEQ ID NO. 104) BPUM

CNTACGCTGCTTCATAACAAGCGTAATCAAACGTAAAATCGCTGGATTGTAAGGCTGGTAAAGATAAGACACTCG
TTCGTTCATTCGATCAGCAGCCATTGTGTATTGAATCAAATCATTTGTTCCAATACTGAAGAAATCAACTTCTTT
TGCGAATTGGTCTGCGATGACAGCGGTTGATGGAATTTCTACCATTATACCGATTTCAATGGAATCGGATACGTC
TGTACCAGCGGCAACCAATGCTTCTTTTTCTTCAAGTAAAATGGCTTTTGCTTCTCTAAATTCTGATAATGTCGC
GATCATAGGGAACATGATTTTCAAGTTTCCATATGTACTTGCACGAAGTAAGGCGCGTAGTTGTGTTCTGAAAAT
CTCCTGTTCTTCGAGGCAAAGGCGGATCGCTCTAAAGCCNAAGAACGGATNTTTTTCNTTAA

105. *Bacillus species* (SEQ ID NO. 105) BSPE

TGAGCGCATCGATAACCATTTTTACAAGACGTAAAATAGATGGGTTATATGGTTGGTATAAGTATGATACTTGTT
CGTTCATACGGTCTGCAGCCATTGTGTATTGGATTAAATCATTTGTTCCGATAGAGAAGAAGTCAACTTCTTTCG
CGAATTGATCTGCTAATACTGCTGAAGCTGGGATTTCAACCATCATACCAACTTCAATAGAATCAGAAACAGTTG
TACCCGCTTCTACAAGTTTCGCTTTCTCTTCTAATAAAATTGCTTTTGCTTGACGGAACTCATCAAGAGTTGCAA
TCATTGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCACGAAGTTGTGTACGGAACACAT
CTTGCTCATCAAGACATAAGCGAATTGCACGGTATCCCAAGAACGGATCCNTTNTNCTTTAA

106. *Lactococcus lactis* (SEQ ID NO. 106) LLAC

GTGAGCTGCTTTGATNCATTGTTAATCAAACGAAGGATTGATGGATTGTAAGGTTGGTAAAGGTAAGAAACTTGT
TCATTCATACGGTCTGCAGCCATTGTATATTGGATGAGGTCGTTTGTACCAATTGAGAAGAAATCAACTTCCTTA
GCAAATTGGTCTGCAAGCATTGCTGCTGCTGGAATTTCAATCATGATACCTACTTCGATACCATCTGCAACTGGA
ACACCTTCAGCAATCAATTTTGCTTTTTCTTCGTCATAAATCTTCTTAGCTGCACGGAACTCAGTTACGAGAGCA
ACCATTGGGAACATGATACGAAGTTGTCCGTGTACAGAAGCACGCAAGAGTGCACGCAATTGTGTACGGAACATT
CCGTCACCAGCTGTTGAAAGGCTGATACGAAGTGCACGCCATCCCANGAACGGTNNTTTTTNTTTTAA

107. *Bacillus firmus* (SEQ ID NO. 107) BFIR

TCCAGGANGGGTTCTNTCNTANGCTGCGTCAATTACCATTTTAACTAAACGCAGGATTGCAGGATTATACGGCTG
GTAAAGGTAAGAAACACGCTCATTCATGCGGTCTGCAGCCATTGTGTACTGAATTAGATCATTAGTGCCAACACT
GAAGAAATCGACTTCTTTAGCAAACTGATCAGCCATAACAGCAGTTGAAGGAATTTCAACCATAATTCCAATTTC
AATGTTGTCGGCAACCTCTGCTCCTTCGCTCACAAGCTTTTGTTTTTCTTCTTCAAGGATTGCTTTGCCCTGACG
GAATTCTTCAAGAGTGGCAATCATAGGGAACATGATTTTAAGGTTTCCATAGGTGCTTGCTCTTAATAAAGCCCT
TAATTGCGTCCTGAACATATCCTGTTCTTCCAGACACAGACGAATCGCCCGGAAGCCCAAGAACGGATTCATTNT
CTTA

108. *Haemophilus influenzae* (SEQ ID NO. 108) HINF

TGAGAGGCATCAATCACTTGTTTAATTAAACCAAGCACAGAGGGGTGCATCGGATTATAAAGATGGGAAATAAAC
TCATTACCGCGATCTACAGCCAAAGTATATTGAGTTAAATCGTTAGTACCGATACTAAAGAAATCCACTTCTTTT
GCTAAAAATTTTGCATTTACTGCGGCAGAGGGGGTTTCGACCATTACACCAACTTGGATATTATTATCAAACAGT
CTCCCCTCTTCACGTAATTCCGCTTTTAATGTTTCAATAACCGCTTTTAATTCCCGAATTTCTTCTACAGAAATA
ATCATCGGGAACATTACCGCCAATTTACCAAAAGCTGAAGCACGTAACACCGCGCGTAATTGTGCATTTAAAATT
TCACGACGATCTAATGCAATGCGAATCGCACGCCATCCCAAGAACGGATNNTTTTTCTT

109. *Streptococcus bovis* (SEQ ID NO. 109) SBOV

TGAGCTGCTTTGATAACGTTGTTAATCAAACGAAGGATTGATGGGTTATATGGTTGGTAAAGGTATGAAACTTGT
TCATTCATACGGTCAGCAGCCATTGTGTATTGGATAAGGTCGTTTGTTCCGATTGAGAAGAAGTCAACTTCTTTT
GCAAATTGGTCAGCAAGCATAGCTGCAGCTGGGATTTCAATCATGATACCAACTTGGATATCATCTGAAACGGCA
ACACCTTCAGCTTTAAGGTTAGCTTTTTCTTCATCAAAGATTGCTTTAGCAGCACGGAATTCTTTAAGAAGTGCA
ACCATTGGGAACATGATACGAAGTTGTCCGTGTACAGATGCACGAAGAAGTGCACGGATTTGTGTACGGAACATT
GCATTTCCTGTTTCTGAGATAGAAATACGAAGTGCACGGAATCCNAAGAACGGTCCNTTTTTNCTTA

110. *Enterococcus durans* (SEQ ID NO. 110) EDUR

TGTGCTGCATCAATCACGTTTTTGATCAAACGTAAAATTGAAGGGTTATAAGGTTGATACAAGTAAGATACACGT
TCGTTCATGCGGTCAGCTGCCATTGTGTATTGAATCAAGTCATTCGTACCTACTGAGAAGAAGTCAACTTCCTTC
GCAAACTTATCTGCTAAGACAGCTGCTGCAGGGATTTCAATCATGATGCCGACTTGGATCGTATCAGATACTTCC
ACGCCTTCGCTCACTAATTTTTGTTTTTCTTCTTCAAAGATTGCTTTCGCTGCACGGAATTCTTTAAGAGTCGCT
ACCATTGGGAACATGATGCGTAAGTTTCCATGAACAGATGCACGTAACAATGCGCGCATTTGTGTACGGAACATT
TCGTCACCTAATTCAGACAAGCTGATACGTAGCGCACGATAGCCCAAGAACGGATNNTTTTCCCTTAA

111. *Streptococcus sanguis* (SEQ ID NO. 111) SSAN

CGCATGAGCTGCCTTGATAACATTGTTAATCAAGCGAAGGATAGATGGATTGTAAGGTTGATAGAGGTAAGAGAC
TTGCTCATTCATCCGGTCAGCCGCCATAGTGTACTGAATCAAGTCGTTAGTACCAATTGAGAAGAAGTCTACTTC
CTTGGCAAATTGATCCGCCAACATAGCTGCTGCTGGGATTTCAATCATGATACCCACTTGGATATTATCTGCTAC
TGCAACGCCTTCAGCTTGCAGCTTAGCTTTTTCTTCGTCATAAACCGCTTTAGCTTTGCGGAATTCTGTCAGAAG
GGCCACCATTGGGAACATGATACGCAATTGTCCATGTACAGAAGCACGCAAGAGAGCGCGGATTTGTGTACGGAA
CATAGCATCGCCAGTTTCAGAGATAGAGATACGCAAAGCACGGAAACCAAAGAACGGTNNTTTTTNTCTTTAAAA

112. *Enterobacter cloaceae* (SEQ ID NO. 112) ECLO

TCCTTTACCTTCTGCATGAGAGCATCAATAACTTGCTTGATCAAGTTCAGTACGGACGGTGACATTGGCTGGTAG
AGATGTGAAATCATATCATTACCACGGTCAACTGCCAGGGTGTACTGCGTTAAATCATTGGTGCCGATACTAAAG
AAATCAACTTCTTTGGCTAAATGACGCGCAATGGTCGCGGCTGCTGGTGTTTCCACCATTACGCCGATCTCAATT
GACTCGTCAAATGCTTTACCTTCGTCACGCAATTCCTGTTTGTAGATCTCGATCTCTTTCTTCAGTGCACGCACT
TCTTCAACAGAGATGATCATCGGGAACATAATGCGCAGCTTACCGAAAGCAGAGGCACGCAGAATCGCACGCACC
TGGTCACGCAGGATTTCTTTACGATCCATGGCGATACGCACTGCACGCCAGCCCAAGAACGGATNNTTTTTTCTT
TAA

113. *Serratia liquefasciens* (SEQ ID NO. 113) SLIQ

NTGNCTTCTGCATGAGNATGCATCAATAACCTGTTTGATCAGGCCAAGCACTGATGGGGACATCGGGTTATAGAG
ATGAGAAATCAGCTCATTGCCGCGATCTACCGCCAGAGTATACTGGGTTAGATCGTTTGTCCCAATACTAAAGAA
GTCGACTTCTTTCGCCAGGTGATGAGCAATCACTGCCGCGGCCGGTGTTTCCACCATTACGCCCACTTCAATGGT
CTCGTCAAAGGCCTTGGATTCTTCACGCAGCTGCGCCTTCAGCGTCTCGATTTCACCTTTCAGATCGCGGACTTC
TTCCACGGAAATGATCATCGGGAACATGATGCGCAGTTTGCCGAACGCGGAAGCGCGCAGGATGGCGCGCAGTTG
CGCGTGCAGGATTTCTCTGCGGTCCATGGCGATACGAATCGCGCGCCAGCCNAAGAACGNTTNTTTTTANTTTA

114. *Proteus mirabis* (SEQ ID NO. 114) PMIR

GTGTGATGCATCAATCACCTGTTTAATCAGATTAAGTACAGCAGGTGACATTGGATTATATAGATGAGATATCAG
CTCATTTCCACGGTCTACAGCCAGAGTATATTGTGTTAGATCGTTAGTCCCAATACTGAAAAAGTCAACTTCTTT
TGCCATATGGCGAGCCATAACAGCCGCTGCTGGCGTTTCAACCATAACACCGACTTCGATAGATTCATCAAAAGG
CTTATTTTCTTCACGAAGCTGGCTTTTCAGTATTTCAAGTTCCGCTTTCAATGCTCGGATCTCTTCAACAGAGAT
AATCATTGGAAACATAATACGTAGTTTACCAAAAGCAGACGCTCTTAAGATAGCACGTAATTGTGGATGAAGGAT
CTCTTTGCGGTCAAGACAAATACGAATTGCACGCCAACCCAAGAACGGATCNTTTNTCCTT

115. *Providencia stuartii* (SEQ ID NO. 115) PSTU

GCCTCTGCATGTGATGCATCAATGACTTGCTTAATCAGTTCAATACAGCAGGCGACATTGGATTGTAGAGGTGAG
AAATCAGCTCATTACCACGGTCAACAGCTAGAGTATATTGAGTGAGATCGTTCGTCCCAATACTGAAAAAGTCAA
CTTCTTTTGCTAAATGATGAGCAATAACCGCTGCGGCAGGGGTTTCCACCATGACACCAACTTCGATTGATTCAT
CAAAGGCTTTGCCTTCTTCACGTAATTGACCTTTTAGCATCTCAAGTTCTGCTTTTAGTTCGCGAACTTCCTCAA
CGGAAATAATCATCGGGAACATAATACGCAGTTTACCAAAACTTGAGGCTCTTAAAATAGCTCTTAACTGAGAAT
GTAGAATTTCTTTGCGATCAAGGCAAATACGAATTGCCCGCCAGCCCAAGAACGGT

116. *Proteus vulgaris* (SEQ ID NO. 116) PVUL

CCTTCTGCATGTGATGCATCAATAACCTGTTTTATCAGGTTAAGTACTGCTGGTGACATTGGATTATACAGATGA
GATATCAGCTCATTTCCACGGTCTACAGCCAGAGTATATTGTGTTAGATCGTTAGTCCCAATACTGAAAAAGTCA
ACTTCTTTTGCCATGAGACGTGCCATTACGGCCGCCGCAGGGGTTTCAACCATGACACCGACTTCGATAGACTCA
TCGAAAGTTTTGTTTTCTGCACGAAGCTGGCTTTTCAGTATTTCAAGTTCTGCTTTCAATGCGCGAATCTCTTCA
ATAGAGATAATCATTGGAAACATAATGCGTAGTTTACCAAAAGCAGATGCTCTTAAGATAGCACGTAATTGCGAA
TGAAGGATCTCTTTACGGTCAAGACAAATACGAATTGCTCTCCAACCCAAGAACGGTCNNTTTTTTTCTTA

117. *Staphylococcus simulans* (SEQ ID NO. 117) SSIM

TTCTCCGCACATACCTGTCCATTTACCTTCAGCATGAGACGCTTCGATAACACGTTGTACCAAGCGTAAAATAGC
TGGGTTATATGGTTGGTATAAATAAGACACACGTTCTGACATACGGTCAGCTGCCATTGTATATTGGATTAAGTC
ATTTGTTCCGATACTGAAGAAGTCTACTTCTTTCGCAAAGACATCAGCAAGTGCTGCTGTCGATGGAATTTCAAC
CATGATACCGACTTCGATATCATCTGAAACTTCAACACCTTCATTTTTAAGGTTTTGACGTTCTTCTTCTAATAA
TGCTTTCGCATCACGGAATTCTTGAATTGTCGCAACCATTGGGAACATAATGTTTAATTTTCCGTATACTGAAGC
ACGTAATAACGCGCGTAATTGCGGACGGAAAATTTCTGGTTGTGCTAAGCACAAGCGGATTGCACGATAACCCAA
GAACGGAT

118. *Staphylococcus sciuri* (SEQ ID NO. 118) SSCI

CTCCGCACATACCAGTCCATTTACCTTCTTTATGAGAAGCTTCAATTACTTGCTTAACTAAGCGAAGAATTGCAG
GGTTATATGGTTGGTATAAGTAAGAAACACGCTCAGACATACGGTCAGCAGCCATTGTATATTGGATTAAATCAT
TCGTACCAATACTGAAGAAATCAACTTCTTTAGCAAAGATGTCTGCAAGTGCTGCAGTAGATGGAATTTCTACCA
TAATACCGATTTCGATATCATCCGCAACGTTAACACCTTCAGAAACTAATTTTTCTTTTTCCTCAAGTAAGATTG
CTTTAGCATCTCTAAATTCTTTAATAGTTGCAATCATAGGGAACATGATATTTAACTTACCAAATTCAGATGCGC
GTAATAAAGCTCTTAATTGTGTTCTAAAGATTTCAGTTTGATCTAAACATAAACGAATCGCTCTATATCCCAAGA
ACGG

119. *Staphylococcus capitis capitis* (SEQ ID NO. 119) SCAPCA

TCCGCACATACCAGTCCATTTACCTTCTTTATGAGAAGCTTCAATGACTTGCTTAACAAGACGTAATATAGATGG
GTTATATGGTTGATATAAATAAGATACACGCTCTGACATACGATCAGCAGCTAGTGTATATTGAATTAAATCATT
TGTACCAATACTAAAGAAATCTACTTCCTTCGCAAAGACATCTGCTAATGCAGCAGTTGCTGGAATTTCAACCAT
GATACCTAATTCAATATCATCAGAAATGTCATAACCTTCATTTTCAAGGTTTTTCTTTTCCTCTAAAAGAATTGC

TTTGGCATCACGGAATTCTTTAATAGTAGCAACCATTGGGAACATGATATTTAATTTACCGTAAGCAGATGCACG
TAATAATGCACGTAATTGCGGTCTAAAAATATCTTGTTGAGCTAAACATAAACGAATTGCTCTATAACCCAAGAA
CGGA

120. *Staphylococcus warneri* (SEQ ID NO. 120) SWAR

CCGCACATACCAGTCCATTTACCTTCTTTGTGAGAAGCTTCAATGACTTGTTTTACTAAGCGTAAAATTGAAGGG
TTGTATGGTTGATATAAGTAAGATACACGTTCAGACATACGGTCAGCTGCTAATGTGTATTGGATTAAGTCATTT
GTACCAATACTAAAGAAATCTACTTCTTTAGCAAATACATCAGCTAATGCTGCTGTCGCTGGTATTTCAACCATG
ATACCTAACTCAATATCTTCAGAAACTTCATAACCTTCATTTTGAAGATTTTCTTTTTCTTCTAATAACATTGCT
TTAGCATCACGGAATTCCTTGATAGTTGCTACCATTGGGAACATGATATTTAATTTACCATAAACTGATGCACGT
AATAACGCGCGTAATTGTGGTCTGAAAATATCAGGTTGAGCTAAGCAAAGACGAATCGCTCTGTATCCCAAGAAC
GGATCATTCTCTTA

121. *Staphylococcus cohnii urealyticus* (SEQ ID NO. 121) SCOHURE

CCGCACATTCCAGTCCATTTGCCTTCTTTATGAGAAGCATCAATCACTTGTTGCACTAAACGTAAAATTGCTGGA
TTGTATGGTTGATACAAGTAAGATACTCGCTCTGACATACGATCCGCGGCCATTGTATATTGAATTAAATCGTTC
GTTCCGATGCTGAAGAAATCTACTTCTTTAGCAAAAACATCTGCTAATGCTGCAGTTGAAGGAATTTCTACCATG
ATACCAACTTCTATATCATCAGATACTTCAATACCTTCATTTGTTAAATTTTCTTTTTCCTCTAATAACAATGCT
TTCGCATCACGGAATTCTTTAATTGTCGCTACCATTGGGAACATAATATTTAAATTCCCATAAGCTGACGCACGT
AATAAAGCACGCAATTGCGGTCTGAAAATGTCAGGTTGATCTAAACATAAACGAATCGCACGGTATCCCAAGAAC
GGNT

122. *Staphylococcus schleiferi scheiferi* (SEQ ID NO. 122) SSCH

CCGCACATACCTGTCCATTTACCTTCTTTATGAGATGCTTCAATTACTTGCTTAACTAAGCGTAAAATTGAAGGA
TTGTAAGGTTGGTAAAGATATGATACACGTTCTGACATACGGTCAGCTGCCATCGTATATTGAATTAAGTCATTC
GTTCCAATACTAAAGAAGTCAACTTCTTTAGCAAAAACATCAGCTAAAGCTGCTGTAGATGGAATTTCCACCATA
ATACCTAACTCAATATCATCGCTAACTTCAACGCCTTCTTGTTTTAAGTTTTCTTTTTCTTCAAGAAGAAGCGCT
TTTGCATCGCGGAATTCTTTAATCGTCGCAACCATTGGGAACATAATGTTCAGTTTTCCGTAAGTTGAAGCGCGT
AATAACGCTCTTAATTGTGGACGGAAAATTTCAGGTTGATCTAAACAAAGACGAATTGCACGGTATCC

123. *Staphylococcus intermedius* (SEQ ID NO. 123) SINT

CCGCACATACCTGTCCATTTGCCCTCTTGGTGAGAAGCGTCAATCACTTGTTTAATTAAACGTAAGNATTGATGG
ATTATATGGTTGGTAAAGATAAGATACACGTTCTGACATACGGTCTGCAGCCATTGTGTATTGAATTAAATCGTT
TGTACCGATACTGAAGAAATCCACTTCTTTCGCAAATACATCTGCAAGTGCGGCTGTTGCAGGGATTTCAACCAT
GATACCTANTTCGATATCGTCGCTCACTTCTACGCCTTCTTGTTTCAAGTTTTCCTTTTCTTCAAGAAGTAACGC
TTTCGCATCACGGAATTCTTGAATCGTTGCCACCATTGGGAACATAATATTCAATTTACCGTATGCTGAAGCTCT
TAATAATGCACGTAATTGTGGACGGAAAATTTCAGGTTGATCTAAACATAAACGAATCGCACGGTAACCCAAGAA
CGGATTCAT

124. *Staphylococcus cohnii cohnii* (SEQ ID NO. 124) SCOHCOH

CCGCACATCCCTGTCCATTTACCTTCTTTATGACTGGCATCAATAACTTGTTTCATCAGTCTAAGAATCGCTGGG
TTATAAGGCTGGTAAAGATAAGAGACGCGTTCACTCATACGGTCTGCAGCCATCGTATATTGAATAAGATCATTC
GTACCGATACTAAAGAAATCAACCTCTTTCGCAAAGATATCGGCCATTGCTGCTGTAGAAGGAATCTCTACCATG
ATGCCAAGCTCGATATCGTCAGCAACTTTAACTTTATCTGCAATTAAATTGGCTTTCTCTTCTTCTAAGATTGCT
TTCGCATCACGGAATTCGTTGATAGTCGCAATCATCGGGAACATGATGCTCAGTTTACCGTGGATGGATGCACGT
AATAACGCACGAAGCTGTGTTCTAAAGATATCCTGCTGATCCAGACAAAGTCGAATCGCACGGTATCCAANGAAC
GGNTTCAT

125. *Staphylococcus capitis uralyticus* (SEQ ID NO. 125) SCAPURA

CCGCACATACCAGTCCATTTACCTTCTTTATGAGAAGCCTCTATTACTTGCTTAACAAGACGTAAAATAGAAGGA
TTATATGGTTGATATAAATAAGATACACGTTCTGACATACGATCAGCAGCTAGTGTGTATTGAATTAAGTCATTA
GTACCGATACTAAAGAAGTCTACTTCCTTCGCAAAGACATCTGCTAATGCAGCAGTTGCTGGAATTTCAACCATG
ATACCTAATTCGATATCGTCAGAAATGTCATAACCTTCATTTTCAAGGTTTTTCTTTTCTTCTAAAAGAATCGCT
TTAGCATCACGGAATTCTTTGATAGTAGCAACCATTGGGAACATGATATTTAATTTACCGTAAGCAGATGCACGT
AATAATGCACGTAATTGCGGTCTGAAAATATCTTGTTGCGCTAAACATAAACGAATTGCTCTATAACCCAAGAAC
GGNTTCATNTCTTA

126. *Staphylococcus gallinarum* (SEQ ID NO. 126) SGAL

CCGCACATACCTGTCCATTTACCTTGTTTAACTAAACGTAAAATTGAAGGATTATATGGTTGATACAAGTATGAT
ACACGTTCTGACATTCTATCTGCAGCCATAGTGTATTGAATTAAATCATTTGTACCGATACTAAAGAAGTCAACC
TCTTTAGCAAATACATCAGCTAAAGCTGCTGTAGAAGGAATTTCTACCATGATACCTAATTCGATATCATCAGAT
ACTTCAACACCTTCTTGTGTTAAATTGTCCTTCTCTTCAAGAAGTAATGCTTTGGCATCACGGAACTCTTGAATT
GTAGCAACCATTGGGAACATGATATTTAACTTACCGAATGCAGATGCGCGTAATAATGCACGCAATTGCGGTCTG
AAAATATCAGGTTGATCCAAGCATAAACGTATCGCACGATATCCCAAGAACGGATTCATNTCTTA

127. *Staphylococcus auricularis* (SEQ ID NO. 127) SAURICU

CCGCACATGCCAGTCCATTTACCTTCTTTATGAGAAGCTTCGATGACTTGTTTGCTCAACCAAGCGTAAAATAGC
TGGATTATATGGTTGATAAAGGTATGATACGCGTTCTGACATGCGGTCTGCAGCCATTGTATATTGAATTAAGTC
GTTTGTACCGATACTAAAGAAGTCGACTTCTTTCGCAAAGACATCTGCTAAAGCAGCTGTTGATGGAATTTCGAC
CATAATACCTAATTCAATATCATCTGAGACTTCAACTCCCTCTTGTTCTAAGTTTGCTTTTTCTTCTTCCAACAA
TGCTTTAGCATCACGGAATTCTTGAATTGTCGCAACCATTGGGAACATGATATTGAGTTTTCCGTACGTAGATGC
ACGTAATAATGCACGTAATTGTGGACGGAAAATATCAGGTTGATCTAAGCATAAACGAATCGCACGATAACCCAA
GAACGGATTCAT

128. *Staphylococcus caseolyticus* (SEQ ID NO. 128) SCAS

CCGCACATCCCTGTCCATTTACCTTCTTTATGACTGGCATCAATAACTTGTTTGATCAGTCTAAGAATC
GCTGGGTTATAGGGCTGGTAAAGATAAGAGACGCGTTCACTCATACGGTCTGCAGCCATCGTATATTGA
ATAAGATCATTCGTACCGATACTAAAGAAATCAACCTCTTTCGCAAAGATATCGGCCATTGCTGCTGTA
GAAGGAATCTCTACCATGATGCCAAGCTCGATATCGTCAGCAACTTTAACTTTATCTGCAATTAAATTG
GCTTTCTCTTCTTCTAAGATTGCTTTCGCATCACGGAATTCGTTGATAGTCGCAATCATTGGGAACATG
ATGCTCAGTTTACCGTGGATGGATGCACGTAATAACGCACGAAGCTGTGTTCTAAAGATATCCTGCTGA
TCCAGACAAAGTCGAATCGCACGGTATCCAAAGAACGGATTCA

129. *Staphylococcus xylosus* (SEQ ID NO. 129) SXYL

TGTGAAGCTTTAATCACTTGTTTTACTAAACGTAAAATTGAAGGATTGTATGGTTGATACAAGTAAGAAACACGC
TCAGACATACGATCAGCAGCCATTGTATATTGAATCAAATCATTTGTACCAATACTAAAGAAATCAACTTCTTTA
GCAAATACATCTGCTAAAGCAGCAGTTGATGGTATCTCTACCATAATACCTAATTCAATATCGTCAGATACTTCA
ATGCCTTCGTTTGTTAAATTCTCTTTTTCTTCCAATAATAATGCTTTTGCATCTCGAAACTCTTTAATTGTGGCA
ACCATTGGGAACATGATATTTAATTTACCGTAAGTAGACGCACGTAACAATGCTCTTAATTGTGGTCTGAAAATA
TCAGGTTGATCTAAGCATAAACGAATTGCACGATATCCCAAGAACGGATCATTTTTCGTAA

130. *Klebsiella pneumoniae* (SEQ ID NO. 130) KPNE

CCGCACATGCCAGTCCATTTACCTTCAGCGTGAGAAGCATCAATAACTTGCTTAATCAGATTCAGTACAGACGGT
GACATCGGCTGGTAAAGATGTGAAATCATATCATTACCACGGTCAACTGCCAGAGTATATTGCGTTAAATCATTG
GTGCCGATACTAAAGAAATCAACTTCTTTGGCCAGATGACGAGCAATAGTCGCCGCAGCCGGTGTTTCCACCATC
ACGCCGATCTCAATGGATTCGTCAAATGCTTTACCTTCGTCACGCAGTTCCTGTTTGTAGATTTCGATCTCTTTC
TTCAGCGCACGCACTTCTTCAACAGAGATGATCATCGGGAACATAATGCGCAGCTTACCGAAAGCGGAGGCGCGC
AGGATGGCGCGAACCTGGTCGCGCAGGATCTCTTTACGATCCATCGCAATACGCACGGCACGCCAGCCNAAGAAC
GGAT

131. *Salmonella typhymurium* (SEQ ID NO. 131) STPMM

CCGCACATGCCAGTCCATTTACCTTCTGCATGAGAAGCATCAATAACTTGCTTGATCAAGTTCAGTACGGACGGT
GACATTGGCTGGTAAAGGTGTGAAATCATATCATTACCACGGTCAACTGCCAGGGTGTACTGCGTTAAATCATTG
GTGCCGATACTAAAGAAATCAACTTCTTTGGCTAAATGACGCGCAATTGTCGCCGCAGCCGGTGTTTCCACCATC
ACGCCAATCTCAATGCTTTCGTCAAATGCTTTACCTTCGTCACGCAGTTCCTGTTTGTAGATTTCAATCTCTTTG
CGCAGCGCGCGAACTTCTTCAACAGAGATGATCATCGGGAACATAATGCGCAATTTACCGAAAGCGGAGGCACGC
AGAATCGCGCGAACCTGGTCACGCAGGATCTCTTTGCGATCCATGGCGATACGCACGGCGCGCCAGCCNANGAAC
GGAT

132. *Escherichia coli* O157 :H7 (SEQ ID NO. 132) ECO157

CCTGCCATTTCACCGCACATGCCAGTCCATTTGCCTTCAGCATGAGAAGCATCAATAACTTGCTTGATCAAGTTC
AGCACGGACGGTGACATTGGCTGGTAAAGGTGTGAAATCATATCATTACCACGGTCAACTGCCAGAGTGTACTGC
GTTAAATCATTGGTGCCGATACTAAAGAAATCAACTTCTTTGGCTAAATGACGTGCAATTGTTGCGGCAGCCGGT
GTTTCCACCATTACGCCGACTTCAATTGACTCGTCAAACGCTTTACCTTCGTCGCGCAGTTCCTGTTTGTAGATT

TCGATCTCTTTGCGCAGTGCACGCACTTCTTCAACAGAGATGATCATCGGGAACATAATGCGCAATTTACCGAAA
GCCGAGGCACGCAGGATAGCGCGGAGCTGATCGCGCAGGATCTCTTTACGATCCATTGCGATACGGATAGCGCGC
CAGCCAAAGAACGGGTTCATTTCTTA

133. ***Escherichia coli*** **K12 (SEQ ID NO. 133)** **ECOK12**

TCCTGCCATTTCTCCGCACATGCCAGTCCATTTGCCTTCAGCATGAGAAGCATCAATAACTTGCTTGATCAAGTT
CAGCACGGACGGTGACATTGGCTGGTAAAGGTGTGAAATCATATCATTACCACGGTCAACTGCCAGAGTGTACTG
CGTTAAATCATTGGTGCCGATACTAAAGAAATCAACTTCTTTGGCTAAATGACGTGCGATTGTTGCGGCAGCCGG
TGTTTCCACCATTACGCCGATTTCAATTGACTCGTCAAACGCTTTACCTTCGTCGCGCAGTTCCTGTTTGTAGAT
TTCGATCTCTTTGCGCAGTGCACGCACTTCTTCAACAGAGATGATCATCGGGAACATAATGCGCAATTTACCGAA
AGCCGAGGCACGCAGGATAGCGCGGAGCTGATCGCGCAGGATCTCTCTACGATCCATCGCGATACGGATAGCGCG
CCAGCCCAAGAACGGATTCATTTCTT

134. ***Citrobacter freundii*** **(SEQ ID NO. 134)** **CFRE**

TCCCGCCATTTCTCCGCACATGCCAGTCCATTTGCCTTCAGCATGAGAAGCATCAATAACTTGCTTGATCAGCGT
CAGCACAGATGGCGACATCGGTTGGTAAAGGTGTGAAATCATATCATTACCACGGTCAACTGCCAGGGTGTACTG
CGTTAAATCATTGGTGCCGATACTAAAGAAATCAACTTCTTTGGCTAAATGACGCGCAATTGTTGCCGCAGCCGG
TGTTTCCACCATCACGCCAATCTCAATGCTCTCGTCAAATGCTTTACCTTCGTCGCGCAGTTCCTGTTTGTAGAT
TTCAATCTCTTTGCGCAGTGCACGCACTTCTTCAACAGAGATGATCATTGGGAACATAATGCGCAGTTTACCGAA
AGCAGAGGCGCGCAGAATCGCGCGAACCTGGTCACGCAGGATCTCTTTACGATCCATGGCGATACGCACGGCACG
TCAGCCCAGGAATGGGTTCATCTCTT

135. ***Pseudomonas putida*** **(SEQ ID NO. 135)** **PPUT**

TCCCGCCATTTCTCCGCACATGCTCACTGGCTTGCCTTCACCATGGGCATCGCGCACCACCGTGCTCAAGGCTTG
CAGCTCCGCCGGGTGCAGGTAGTCGTACAGGTCGGCAACCCGCGGGTTGTTGCGGTCCACCGCCAGCAGGTACTG
GGTCAGGTCGTTGGAGCCGACCGACAGGAAATCCACCTGCCGCGCCAGTTCCTTGGTCTGGTACACCGCCGCAGG
TATTTCCACCATCACGCCCACCGGCGGCATCGGCACATCGGTGCCTTCGTCACGCACCTCGCCCCAGGCGCGGTG
GATCAGGTGCAGCGCTTCTTCCAGCTCGTGGATGCCGGAAATCATCGGCAGCAGGATGCGCAGGTTGTTCAGGCC
CTCGCTGGCCTTGAGCATGGCGCGAGTCTGCACCAGGAAGATTTCCGGGTGGTCGAGGGTGACGCGGATGCCGCG
CCAGCCTAAGAATGGATTCATCTCGT

136. ***Shigella sonnei*** **(SEQ ID NO. 136)** **SSON**

CCGGCCATTTCACCACACATGCCAGTCCATTTGCCTTCAGCATGAGAAGCATCAATAACTTGCTTGATCAAGTTC
AGCACGGACGGTGACATTGGCTGGTAAAGGTGTGAAATCATATCATTACCACGGTCAACTGCCAGAGTGTACTGC
GTTAAATCATTGGTGCCGATACTAAAGAAATCAACTTCTTTGGCTAAATGACGTGCAATTGTTGCGGCAGCCGGT
GTTTCCACCATTACGCCGATTTCAATTGACTCGTCAAACGCTTTACCTTCGTCGCGCAGTTCCTGTTTGTAGATT
TCGATCTCTTTGCGCAGTGCACGCACTTCTTCAACAGAGATGATCATCGGGAACATAATGCGCAATTTACCGAAA
GCCGAGGCACGCAGGATAGCGCGGAGCTGATCGCGCAGGATCTCTTTACGATCCATCGCGATACGGATAGCGCGC
CAGCCCAGGAACGGATTCATCTCTTA

137. ***Listeria innocua*** **(SEQ ID NO. 137)** **LINN**

TCCTGCCATTTCTCCGCACATACCAGTCCATTTGCCCTCTTTATGAGAAGCATCAATTACCATTTTTACTAAGCG
TAAAATAGATGGATTGTATGGTTGGTAAAGGTAAGAAACGCGTTCATTCATACGGTCAGCAGCCATTGTATACTG
AATCAAGTCATTTGTTCCGATTGAGAAGAAATCAACTTCTTTTGCAAATTGATCAGCTAAAACTGCAGCAGCAGG
AATTTCAATCATAATTCCAAGTTCGATGGAATCAGATACTTCTGTTCCAGCAGCTTTTAGTTTCGCTTTTTCATC
TAGTAAAATATCGCGCGCTTGGCGGAATTCATTTACTGTTGCAATCATCGGGAACATAATTTTTAAGTTACCATA
TACACTTGCGCGAAGTAGAGCGCGAAGTTGTGTACGGAATAATTCTTCATTCGCAAAACAAAGACGAATCGCACG
GAATCCTAAGAACGGGTTCATTTCGT

138. ***Serratia marcescens*** **(SEQ ID NO. 138)** **SMAR**

TTCTNNGANGGACTCTNTCNTAAANAGCATCAATAACCTGTTTGATCAGGCCAAGCACTGATGGGGACATCGGGT
TATAGAGATGAGAAATCAGCTCGTTGCCGCGATCTACCGCCAGAGTATACTGGGTTAGATCGTTTGTCCCAATAC
TAAAGAAGTCGACTTCTTTCGCCAGGTGGTGAGCGATGACCGCCGCAGCCGGTGTTTCCACCATCACGCCCACTT
CGATGCTCTCGTCAAACGCCTTGCCTTCTTCGCGCAGCTGCGCCTTCAGCGTCTCGATTTCGCCTTTCAGATCGC
GCACTTCTTCCACGGAGATGATCATCGGGAACATGATGCGCAGTTTACCGAACGCCGAGGCGCGCAGGATGGCGC
GCAGCTGGGCGTGCAGGATTTCACGGCGGTCCATCGCGATGCGGATGGCGCGCCAGCCNAAGAACGGATTCATTN
TCTTA

139. ***Salmonella enterica*** **hadar (SEQ ID NO. 139)** **SHAD**

CCGCACATGCCAGTCCATTTACCTTCTGCATGAGAAGCATCAATAACTTGCTTGATCAAGTTCAGTACGGACGGT
GACATTGGCTGGTAAAGGTGTGAAATCATATCATTACCACGGTCAACTGCCAGGGTGTACTGCGTTAAATCATTG
GTGCCGATACTAAAGAAATCAACTTCTTTGGCTAAATGACGCGCAATTGTCGCCGCAGCCGGTGTTTCCACCATC
ACGCCAATCTCAATGCTTTCGTCAAATGCTTTACCTTCGTCACGCAGTTCCTGTTTGTAGATTTCAATCTCTTTG
CGCAGCGCGCGAACTTCTTCAACAGAGATGATCATCGGGAACATAATGCGCAATTTACCGAAAGCGGAGGCACGC
AGAATCGCGCGAACCTGGTCACGCAGGATCTCTTTGCGATCCATGGCGATACGCACGGCGCGCCAGCCNAAGAAC
GGAT

140. ***Salmonella enteritidis*** **(SEQ ID NO. 140)** **SENT**

CCGCACATGCCAGTCCATTTACCTTCTGCATGAGAAGCATCAATAACTTGCTTGATCAAGTTCAGTACGGACGGT
GACATTGGCTGGTAAAGGTGTGAAATCATATCATTACCACGGTCAACTGCCAGGGTGTACTGCGTTAAATCATTG
GTGCCGATACTAAAGAAATCAACTTCTTTGGCTAAATGACGCGCAATTGTCGCCGCAGCCGGTGTTTCCACCATC
ACGCCAATCTCAATGCTTTCGTCAAATGCTTTACCTTCGTCACGCAGTTCCTGTTTGTAGATTTCAATCTCTTTG
CGCAGCGCGCGAACTTCTTCAACAGAGATGATCATCGGGAACATAATGCGCAATTTACCGAAAGCGGAGGCACGC
AGAATCGCGCGAACCTGGTCACGCAGGATCTCTTTGCGATCCATGGCGATACGCACGGCGCGCCAGCCNAAGAAC
GGAT

141. ***Salmonella enterica*** **Brandenburg (SEQ ID NO. 141) SBRA**

CCGCACATGCCAGTCCATTTACCTTCTGCATGAGAAGCATCAATAACTTGCTTGATCAAGTTCAGTACGGACGGT
GACATTGGCTGGTAAAGGTGTGAAATCATATCATTACCACGGTCAACTGCCAGGGTGTACTGCGTTAAATCATTG
GTGCCGATACTAAAGAAATCAACTTCTTTGGCTAAATGACGCGCAATTGTCGCCGCAGCCGGTGTTTCCACCATC

ACGCCAATCTCAATGCTTTCGTCAAATGCTTTACCTTCGTCACGCAGTTCCTGTTTGTAGATTTCAATCTCTTTG
CGCAGCGCGCGAACTTCTTCAACAGAGATGATCATCGGGAACATAATGCGCAATTTACCGAAAGCGGAGGCACGC
AGAATCGCGCGAACCTGGTCACGCAGGATCTCTTTGCGATCCATGGCGATACGCACGGCGCGCCAGCCNAAGAAC
GGAT

142. ***Salmonella enterica*** **derby (SEQ ID NO. 142) SDER**

CCGCACATGCCAGTCCATTTACCTTCTGCATGAGAAGCATCAATAACTTGCTTGATCAAGTTCAGTACGGACGGT
GACATTGGCTGGTAAAGGTGTGAAATCATATCATTACCACGGTCAACTGCCAGGGTGTACTGCGTTAAATCATTG
GTGCCGATACTAAAGAAATCAACTTCTTTGGCTAAATGACGCGCAATTGTCGCCGCAGCCGGTGTTTCCACCATC
ACGCCAATCTCAATGCTTTCGTCAAATGCTTTACCTTCGTCACGCAGTTCCTGTTTGTAGATTTCAATCTCTTTG
CGCAGCGCGCGAACTTCTTCAACAGAGATGATCATCGGGAACATAATGCGCAATTTACCGAAAGCGGAGGCACGC
AGAATCGCGCGAACCTGGTCACGCAGGATCTCTTTGCGATCCATGGCGATACGCACGGCGCGCCAGCCNAAGAAC
GGAT

143. ***Salmonella enterica*** **virschow (SEQ ID NO. 143) SVIR**

CCGCACATGCCAGTCCATTTACCTTCTGCATGAGAAGCATCAATAACTTGCTTGATCAAGTTCAGTACGGACGGT
GACATTGGCTGGTAAAGGTGTGAAATCATATCATTACCACGGTCAACTGCCAGGGTGTACTGCGTTAAATCATTG
GTGCCGATACTAAAGAAATCAACTTCTTTGGCTAAATGACGCGCAATTGTCGCCGCAGCCGGTGTTTCCACCATC
ACGCCAATCTCAATGCTTTCGTCAAATGCTTTACCTTCGTCACGCAGTTCCTGTTTGTAGATTTCAATCTCTTTG
CGCAGCGCGCGAACTTCTTCAACAGAGATGATCATCGGGAACATAATGCGCAATTTACCGAAAGCGGAGGCACGC
AGAATCGCGCGAACCTGGTCACGCAGGATCTCTTTGCGATCCATGGCGATACGCACGGCGCGCCAGCCNAAGAAC
GGAT

144. ***Salmonella enterica paratyphi B*** **(SEQ ID NO. 144) SPTB**

CCGCACATGCCAGTCCATTTACCTTCTGCATGAGAAGCATCAATAACTTGCTTGATCAAGTTCAGTACGGACGGT
GACATTGGCTGGTAAAGGTGTGAAATCATATCATTACCACGGTCAACTGCCAGGGTGTACTGCGTTAAATCATTG
GTGCCGATACTAAAGAAATCAACTTCTTTGGCTAAATGACGCGCAATTGTCGCCGCAGCCGGTGTTTCCACCATC
ACGCCAATCTCAATGCTTTCGTCAAATGCTTTACCTTCGTCACGCAGTTCCTGTTTGTAGATTTCAATCTCTTTG
CGCAGCGCGCGAACTTCTTCAACAGAGATGATCATCGGGAACATAATGCGCAATTTACCGAAAGCGGAGGCACGC
AGAATCGCGCGAACCTGGTCACGCAGGATCTCTTTGCGATCCATGGCGATACGCACGGCGCGCCAGCCNAAGAAC
GGAT

145. ***Streptococcus thermophilus*** **(SEQ ID NO. 145) STHE**

CCGCTCATACCAGCCCATTTACCTTCAGCGTGAGCTGCCTTAATAACGTTGTTAATCAAGCGAAGGATTGATGGG
TTATATGGTTGGTAAAGGTATGAAACTTGTTCATTCATACGGTCAGCAGCCATTGTGTATTGGATAAGGTCGTTT
GTACCAATTGAGAAGAAATCAACTTCTTTAGCAAATTGGTCAGCAAGCATTGCTGCAGCTGGGATTTCAATCATG
ATACCTACTTCGATGTCGTTTGCAACGGCAACACCTTCAGCAACCAATTTAGCTTTTTCTTCTTCAAGAATACCT
TTAGCAGTACGGAACTCAGTCAACAAAGCAACCATTGGGAACATGATACGCAATTTACCGTGAACAGATGCACGA
AGCAAGGCACGTAATTGAGTACGGAACATTTGGTTACCAGTTTCAGAGATAGAAATACGTAATGCACGGTAACCC
AAGAACGG

146. *Streptococcus suis* (SEQ ID NO. 146) SSUI

GCCCACATACCAGCCCATTTACCTTCTGCGTGTGCAGCCTTGATAACATTGTTAATCAAGCGAAGGATTGATGGG
TTATATGGTTGGTAGAGGTATGAAACTTGTTCATTCATACGGTCTGCAGCCATTGTGTACTGGATAAGGTCGTTC
GTACCGATTGAGAAGAAGTCAACTTCTTTGGCAAATTGGTCTGCAAGCATTGCTGCTGCAGGGATTTCAATCATG
ATACCAACTTGGATATCATCCGCAACTGCTACACCTTCAGCCAACAAGTTTGCTTTTTCTTCATCAAGGATTGCT
TTTGCTGCACGGAATTCAGTCAACAAGGCAACCATTGGGAACATGATACGAAGTTTACCATGTACTGATGAACGA
AGAAGGGCACGCAACTGAGTGCGGAACATTTGGTTACCAGTCTCAGAGATAGAGATACGAAGGGCACGGAAACCN
AAGAA

147. Bacillus pseudomycoides (SEQ ID NO. 147) BPMS

CCGCACATACCAGCCCATTTTCCTTCTTTATGAGCAGCATCGATAACCATTTTTACAAGGCGTAAAATAGATGGA
TTATACGGTTGGTATAAGTAAGATACACGTTCATTCATACGGTCTGCAGCCATTGTGTATTGGATTAGGTCGTTT
GTTCCGATAGAGAAGAAATCAACTTCTTTTGCAAACTGATCTGCTAATACTGCAGAAGCGGGAATTTCTACCATC
ATACCTACCTCAATAGCATCAGAAACAGTTGTACCAGCTTGAACAAGTCTTTCTTTCTCTTCTAATAAAATTGCT
TTTGCTTGACGGAATTCATCAAGAGTTGCAATCATTGGGAACATAATTTTTAAATTACCATATACGCTTGCACGA
AGCAATGCACGAAGTTGTGTACGGAACACATCTTGTTCTTCAAGGCATAAGCGAATCGCACGGTAACCCAAGAA

148. *Staphylococcus lugdunensis* (SEQ ID NO. 148) SLUG

CCGCACATACCAGTCCATTTACCTTCTTTATGAGAAGCTTCAATCACTTGTTTCACTAGACGTAAAATAGCTGGA
TTATATGGTTGATAAAGGTATGATACACGTTCTGACATGCGGTCAGCAGCCATTGTGTATTGAATCAAATCATTA
GTACCGATACTGAAGAAATCAACTTCTTTAGCAAAGATATCAGCTAATGCAGCTGTTGATGGGATTTCTACCATT
ATTCCGAGCTCGATATCATCTGACACGTCATGTCCTTCATTTTTTAGATTTTCTTTTTCTTCTAAAAGAAGCGCT
TTGGCATCTCTAAACTCATTAATAGTAGCAACCATTGGGAACATAATATTTAATTTTTCCATATGCTGAAGCACG
CAAAAGAGCGCGCAACTGTGGTCTGAAAATATCAGGTTGATCTAAGCACAATCGAATCGCACGGTAACCNAAGAA

149. *Cryptococcus neoformans* (SEQ ID NO. 149) CNEO

CGACAGTTATGACCGACCCGGATCTTCTGTGATGGATTTGAGTAAGAGCATATATGCTGGGACCCGAAAGATGGT
GAACTATGCCTGAATAGGGCGAAGCCAGGGGAAACTCTGGTGGAGGCTCGTAGCGATTCTGACGTGCAAATCGAT
CGTCGAATTTGGGTATAGGGGCGAAAGACTAATCGAACCATCTAGTAGCTGGTTCCTGCCGAAGTTTCCCTCAGG
ATAGCAGAAACTCGCATCAGTTTTATGAGGTAAAGCGAATGATTAGAGGCCTTGGGGACGAAACGTCCTTAACCT
ATTCTCAAACTTTAAATGTGTAAGAAGCACTTGTCACTTAATTGGACGAGCGCATGCGAATGAGAGTTTCTAGTG
GGCCATTTTTGGTAAGCAGAACTGGCGATGCGGGATGAACCGATCGCGAGGTTAAGGTGCCGGAATACACGCTCA
TCAGACACCACAAAAGGTGTTAGTTCATCTAGACAGCAGGACGGTGGCCATGGAAGTCGGAATCCGCTAAGGAGT
GTGTAACAACTCACCTGCCGAATGAACTAGCCCTGAAAATGGATGGCGCTCAAGCGTGTTACCCA

Figure 6. Molecular marker III (SpyM_0902 &SpyM_0903) sequences amplified from Gram positive bacteria (SEQ ID NOs 150-180).

150. Streptococcus thermophilus (SEQ ID NO. 150) *STHE*

TTGNAACGGCTTATGCTGTAGNACAAGNACACCGAAGGGGCAAGGGATAAGACCCGAAACTCTCAGGTAAAAGGA
CAGAAAGCATTGAATGTTTTTAACTTTCAGTAATAGCTTTGTACTTTCAGAGGTCTGGTTAAGCCAAACCTCTTT
TTGATGTCTCGGTCTAAGGAGATTTTAAACGCATGTTAGACTTTTTCACTTCCATTGATGACTTTGTATGGGGAC
CTCCCCTTCTTGTCCTTCTTGTAGGAACTGGTATCTACCTTACAATCCGTCTTGGACTTTTGCAAATCATTCGTC
TGCCTAAAGCCTTTAAACTTATCTTTGCTGAAGATAAAGGAGAGGGTGATATTTCTAGTTTTGCAGCCCTTGCCA
CAGCACTTGCTGCAACTGTTGGTACTGGTAACATTGTTGGTGTTGCGACAGCCATTAAGACTGGTGGGCCTGGTG
CTCTTTTCTGGATGTGGATTGCTGCTTTCT

151. *Enterococcus villorum* (SEQ ID NO. 151) SVIL

CCGAAGGGGCAAGGGATAAGACCCGAAACTCTCAGGTAAAAGGACAGAAAGCATTGAATGTTTTTAACTTTCAGT
AATAGCTTTGTACTTTCAGAGGTCTGGTTAAGCCAAACCTCTTTTTGATGTCTCGGTCTAAGGAGATTTTAAACG
CATGTTAGACTTTTTCACTTCCATTGATGACTTTGTATGGGGACCTCCCCTTCTTGTCCTTCTTGTAGGAACTGG
TATCTACCTTACAATCCGTCTTGGACTTTTGCAAATCATTCGTCTGCCTAAAGCCTTTAAACTTATCTTTGCTGA
AGATAAAGGAGAGGGTGATATTTCTAGTTTTGCAGCCCTTGCCACAGCACTTGCTGCAACTGTTGGTACTGGTAA
CATTGTTGGTGTTGCGACAGCCATTAAGACTGGTGGGCCTGGTGCTCTTTTCTGGATGTGGATTGCTGCTTTCTT
TGGAATG

152. *Streptococcus pyogenes* (SEQ ID NO. 152) SPYO

TTANAGGCGCCGAGGGGCAAGGCATACTGCTCAATCTCTCAGGCAAAAGGACAGAAGGTAAAATACAAACACCAT
TAAGAACAGTCTTAGTCTTTTTTGTGTTTGCTGTTTTATCATTGCTTCAGAAGTTGTCTCAAAGAAAGAGATAGC
TTTTTTCTTTTGGCGTCTTCGATGACTTTTAGGAGAGAAAGATGATAGCACTCGTTAAATTAATTGATAACCTTG
TTTGGGGACCGCCCCTCTTAATTTTATTGGTTGGGACGGGGATTTACCTTACCAGTCATTTAGGATTAATTCAAA
TCTTAAAACTACCAAGAGCCTTTAAACTCATTTTTTCAGATGACGAAGGACATGGAGATATTTCATCCTTTGCTG
CTCTTGCAACTGCCCTTGCCGCTACTGTCGGAACTGGTAACATTGTTGGGGTTGCCACTGCTATCAAGTCTGGTG
GTCCTGGAGCGCTCTTTTGGATGTGGGTTGCCGCTTTTTTTGGAATGG

153. *Streptococcus mutans* (SEQ ID NO. 153) SMUT

GCGCCGAGGGGCAAGGCTGTTTGCTCAAACTCTCAGGCAAAAGGACAGAAAAGAAAAAAAGAATTTTTAATGTTG
AAACAATTCTTATCTTCTAACTCTAGAGGTATCGTCAAGTATTGACAACCTCTTTTTTGATTTCCATTTCGGTTT
ATGAGGAGAAAAGTTTATATGTTAACATTTTTTAAAGCTCTAGACAGCTTTGTCTGGGGTGTTCCCCTATTAGTT
CTTTTAGTCGGTACTGGAATTTATTTGAGTACTCGCTTAAGATTATTGCAGGTATTGAAACTCCCTTTAGCCTTT
AAACTCATCTTTGCCGAGGACAAAGGGGAAGGTGATATTTCGAGTTTTGCGGCTTTAGCTACTGCTCTTGCTGCC
ACTGTTGGAACTGGAAATATCGTTGGTGTTGCCACTGCAATCAAAGCTGGCGGTCCGGGAGCACTCTTTTGGATG
TGGATAGCAGCTTTTTTTGGAATGGC

154. ***Streptococcus agalactiae*** **(SEQ ID NO. 154) SAGA**

AAGTAGCAACATCTTTGTATTGACACCAAGNATGTGCTCTAGGCGCCGAAGGGGCAAGAAGAGTAAAACAACTCC
TCCAATCTCTCAGGCAAAAGGACAGAAGCTAAAAGCCAATATTAATAATGAGTAGTAAGCTTATTAAGTTTACTA
CTACCTTTATTTGTGCGCTTTTTAGCTAGCATCTTTCAGAAGTTATCTCTTTTAGAGATAACTTTTTTCGTTTCA
TTACAGAATCCATAGGTATGTCATGTATCAAAGGAGAACATATGCTAACACTTTTTACTCATATCAATAGCTTCG
TTTGGGGTCCACCTTTACTTGCTTTATTAGTCGGAACAGGTATTTACCTATCATTTCGCTTAGGTTTTGTTCAAT
TGAGACAACTTTCTAGAGCTTTCAAATTGATTTTCCGAGAAGATAACGGACAAGGGGATATTTCAAGTTATGCTG
CTCTTGCAACTGCTCTTGCTGCAACGGTAGGGACAGGTAATATCGTTGGTGTGGCTACGGCTATTAAATCTGGAG
GACCAGGAGCTTTGTTTTGGATGTGGGTAGCCGCCTTTTTTGGAATGGCCC

155. ***Streptococcus sanguis*** **(SEQ ID NO. 155) SSAN**

TAGAACCGCTCAAACTCTCAGGTAAAAGGACAGAGCGAAGAGGCAGGGATTTCCCTACTCCAGCACATCCAGGAG
TACATGTTTTGCATGTGCTCTTTCTTTTTCTCGGTGTGAAAAGGAGCTTATATCATGTTGGAAATATTGAATCGT
CTGGATTCTTTTGTTTGGGGTCCGCCCCTGCTCATTTTGCTGGTTGGTACTGGTATCTATCTCAGTCTGCGTCTG
GGCTTGCTGCANATTTTTCGACTTCCTCGTGCCTTTCGGCTAATCTTTGTATCGGACGAGGAGCATCAGGGCGAT
GTCTCTAGCTTTGCGGCTCTCTGTACGGCTCTAGCCGCGACTGTGGGAACGGGAAATATCATCGGAGTGGCAACT
GCCATTAAAACCGGTGGACCGGGGGCGCTCTTCTGGATGTGGGTGGCTGCTTTCTTTGGAATGGC

156. ***Streptococcus oralis*** **(SEQ ID NO. 156) SORA**

GGGCAAGGCAGGTAACTGCTCAAACTCTCAGGTAAAAGGACAGAGCTAGGATAGACCGCTTTTTGGCATTTATCT
AAGCATTCCAGAGTACATGTATCTTGCATGTACTCTTTCTTTTGGGGTTGAAAGATAGGAGAAGGACATGTTAGA
ATTGCTTAAAGCGCTTGATGCTTTTGCTTGGGGGCCTCCCCTCTTGATCTTATTGGTCGGAACGGGTATCTATTT
GACCATCCGACTGGGCCTTTTGCAGGTTACTCGTCTCCCTAAGGCCTTTCAGTTGATCTTTACCAAGGACAAGGG
GCACGGCGATGTGTCGAGCTTTGCTGCTCTCTGTACGGCTCTAGCAGCCACAGTTGGTACGGGAAATATCATCGG
GGTAGCGACAGCCATTAAGGTTGGAGGACCAGGGGCCCTCTTTTGGATGTGGATGGCGGCCTTCTTTGGAATGGC

157. ***Streptococcus suis*** **(SEQ ID NO. 157) SSUI**

TTTTGGCCCGANGGGCAAGGTAGTCCTGCTTGGAAAAGTAGAGCTACTGAAACTCTCAGGTAAAAGGACAGAGCG
TTGAAAAATAGGCTTTTTCTGTATTTTTCACGTTGATTCTAGAGGTTGAAGTGTTCAGCCTCTTTTTGTTTTTCC
GGCAGCTTTATCGGGTTAGAAACGCTTAGGAGGAACTATGTTAGAACTATTTAAGGCTATCAACAATCTTGTTTG
GGGACCGCCCCTCTTGTTACTATTGGTCGGAACGGGTGTCTATTTTACCCTACGGTTGGGAGTATTTCAGATTGG
CAAATTGCCGACGGCTTTTCGTCTGATTTTCTCCAGTGACCAGTCTGGTCAGGGAGATGTGTCCAGTTTTGCGGC
TCTGTGTACGGCTTTAGCAGCGACAGTTGGTACAGGAAATATCGTCGGAGTTGCGACAGCTATTACTACAGGTGG
TCCTGGGGCTCTTTTCTGGATGTGGGTTGCGGCCTTTTTTGGAATGGC

158. ***Staphylococcus simulans*** **(SEQ ID NO. 158) SSIM**

ATCCGGCTTTGAGTTTAAAGCTATTGATGCTTTAATTACGAACTTCCATCTGCCGAAGTCCACACTTGTCATGTT
AGTTTCAGCATTCAGTTCAAAACAATATATTTTAAATGCATACCAAACAGCTGTCGAAATGAAATATCGATTCTT
CAGCTTTGGTGATGCAATGTTAATTATTTAAGGGAGTCGTGAAAAAGTTATGCCTGCAGTAACTTATGAACATAT
CAAAACATGTAAACAATCCGGTGCAAGGTTAGGAATCGTGCATACACCGCACGGTTCGTTTGAAACACCTATGTT

TATGCCAGTAGGAACTCAAGCTACCGTTAAAACTATGAGTCCTGAAGAACTAAGGGAAATTAATGCACAAATCAT
TTTAGGCAACACATACCATTTATGGTTGCAACCCGGCAATGACATTATTAAACGCGCGGGTGGTTTGCATAAATT
TATGATTTGGAATGGCCAC

159. ***Enterococcus faecalis*** **(SEQ ID NO. 159) EFLS**

GTAAAGGCACCGAAGGGGCAAGGCAGGTAACTGCTCAAACTCTCAGGTAAAAGGACAGAGCTAGGATAGACCGCT
TTTTGGCATTTATCTAAGCATTCCAGAGTACATGTATCTTGCATGTACTCTTTCTTTTGGGGTTGAAAGATAGGA
GAAGGACATGTTAGAATTGCTTAAAGCGCTTGATGCTTTTGCTTGGGGGCCTCCCCTCTTGATCTTATTGGTCGG
AACGGGTATCTATTTGACCATCCGACTGGGCCTTTTGCAGGTTACTCGTCTCCCTAAGGCCTTTCAGTTGATCTT
TACCAAGGACAAGGGGCACGGCGATGTGTCGAGCTTTGCTGCTCTCTGTACGGCTCTAGCAGCCACAGTTGGTAC
GGGAAATATCATCGGGGTAGCGACAGCCATTAAGGTTGGAGGACCAGGGGCCCTCTTTTGGATGTGGATGGCGGC
CTTCTTTGGAATGGCCC

160. ***Streptococcus pneumoniae*** **(SEQ ID NO. 160) SPNE**

GTAAAGGCACCGAAGGGGCAAGGCAGGCAACTGCTCAAACTCTCAGGTAAAAGGACAGAGCTAGGATAGACCGCT
TTTTAGCATTTATCTAAGCATTCCAGAGTACATGTATCTTGCATGTGCTCTTTCTTTTGGGGTTGAAACGATAGG
AGAAGGAAATGTTAGAATTGCTTAAATCAATCGATGCTTTTGCTTGGGGACCGCCCCTCTTGATTTTATTGGTCG
GAACAGGGATTTACCTAACCATGCGGCTAGGACTCTTGCAGGTTTTGCGTCTGCCCAAGGCCTTTCAGCTTATTT
TTATCCAGGATAAGGGACATGGTGATGTATCCAGTTTTACAGCTCTGTGTACAGCCTTGGCATCAACTGTTGGAA
CAGGAAATATCATAGGAGTTGCGACGGCTATCAAGGTTGGTGGACCAGGAGCTCTATTTTGGATGTGGATGGCGG
TTTTCTTTGGAATGGCCC

161. ***Enterococcus durans*** **(SEQ ID NO. 161) EDUR**

NGNCCGAGGGGCAAGGTCAGNACAACTGCTCAAACTCTCAGGTAAAAGGACAGAGCTAGGATAGACCGCTTTTTA
GCATTTATCTAAGCATTCCAGAGTACATGTATCTTGCATGTGCTCTTTCTTTTGGGGTTGAAACGATAGGAGAAG
GAAATGTTAGAATTGCTTAAATCAATCGATGCTTTTGCTTGGGGACCGCCCCTCTTGATTTTATTGGTCGGAACA
GGGATTTACCTAACCATGCGGCTAGGACTCTTGCAGGTTTTGCGTCTGCCCAAGGCCTTTCAGCTTATTTTTATC
CAGGATAAGGGACATGGTGATGTATCCAGTTTTACAGCTCTGTGTACAGCCTTGGCATCAACTGTTGGAACAGGA
AATATCATAGGAGTTGCGACGGCTATCAAGGTTGGTGGACCAGGAGCTCTATTTTGGATGTGGATGGCGGTTTTC
TTTGGAATGGCCC

162. ***Bacillus anthracis*** **1978 (SEQ ID NO. 162)**

NGAGGAAAACGAGCACCGAAGGAGCAAATCCGCTACTATAGCGGATAATCTCTCAGGTAAAAGGACAGAGACAAG
CGAAAGAAAATGCCGATTTGTATCGGTTTATTTTTCTATCCCTTGTTTCTCCAGAGACCATTTCATTTACTTGAA
GTGGTTTTTATTTTTTCTAAAAAAGGAGAATAAAGATGGAGACAGTAAGTAAAGTATTAGAACAAATCAATCACT
ATGTGTGGGGATTACCAACGTTATTGTTACTCGTTGGTACTGGTATTATTCTCACAGTGCGTTTAAAAGGTTTAC
AGTTTAGTAAACTATTATACGCTCACAAACTAGCTTTTAAAAAATCAGAAGATACATCTTCCTCTGGAGATATTA
GCCACTTCCAAGCGCTTATGACAGCTATGGCGGCAACGATTGGTATGGGAAATATAGCTGGTGTTGCAACTGCTG
TGACGATCGGTGGACCTGGTGCAATCTTTTGGATGTGGATTACTGCTTTGTTTGGAATGGCCCAAAA

163. *Bacillus anthracis* Sterne (SEQ ID NO. 163)

TNCNCGCTTTAAATAGCGTAGNAGGCAAAACGAGCACCGAAGGAGCAAATCCGCTACTATAGCGGATAATCTCTC
AGGTAAAAGGACAGAGACAAGCGAAAGAAAATGCCGATTTGTATCGGTTTATTTTTCTATCCCTTGTTTCTCCAG
AGACCATTTCATTTACTTGAAGTGGTTTTTATTTTTTCTAAAAAAGGAGAATAAAGATGGAGACAGTAAGTAAAG
TATTAGAACAAATCAATCACTATGTGTGGGGATTACCAACGTTATTGTTACTCGTTGGTACTGGTATTATTCTCA
CAGTGCGTTTAAAAGGTTTACAGTTTAGTAAACTATTATACGCTCACAAACTAGCTTTTAAAAAATCAGAAGATA
CATCTTCCTCTGGAGATATTAGCCACTTCCAAGCGCTTATGACAGCTATGGCGGCAACGATTGGTATGGGAAATA
TAGCTGGTGTTGCAACTGCTGTGACGATCGGTGGACCTGGTGCAATCTTTTGGATGTGGATTACTGCTTTGTTTG
GAATGGCCCAAAAA

164. *Bacillus anthracis* Butare (SEQ ID NO. 164)

NNCNCNCGCTNTAAATAGCGTAGAGGCAAAACGAGCACCGAAGGAGCAAATCCGCTACTATAGCGGATAATCTCT
CAGGTAAAAGGACAGAGACAAGCGAAAGAAAATGCCGATTTGTATCGGTTTATTTTTCTATCCCTTGTTTCTCCA
GAGACCATTTCATTTACTTGAAGTGGTTTTTATTTTTTCTAAAAAAGGAGAATAAAGATGGAGACAGTAAGTAAA
GTATTAGAACAAATCAATCACTATGTGTGGGGATTACCAACGTTATTGTTACTCGTTGGTACTGGTATTATTCTC
ACAGTGCGTTTAAAAGGTTTACAGTTTAGTAAACTATTATACGCTCACAAACTAGCTTTTAAAAAATCAGAAGAT
ACATCTTCCTCTGGAGATATTAGCCACTTCCAAGCGCTTATGACAGCTATGGCGGCAACGATTGGTATGGGAAAT
ATAGCTGGTGTTGCAACTGCTGTGACGATCGGTGGACCTGGTGCAATCTTTTGGATGTGGATTACTGCTTTGTTT
GGAATGGCCCAAAA

165. *Bacillus anthracis* 1655H85 (SEQ ID NO. 165)

TNTNTCGCTTTNATAGCGTAGTAGGCAAAACGAGCACCGAAGGAGCAAATCCGCTACTATAGCGGATAATCTCTC
AGGTAAAAGGACAGAGACAAGCGAAAGAAAATGCCGATTTGTATCGGTTTATTTTTCTATCCCTTGTTTCTCCAG
AGACCATTTCATTTACTTGAAGTGGTTTTTATTTTTTCTAAAAAAGGAGAATAAAGATGGAGACAGTAAGTAAAG
TATTAGAACAAATCAATCACTATGTGTGGGGATTACCAACGTTATTGTTACTCGTTGGTACTGGTATTATTCTCA
CAGTGCGTTTAAAAGGTTTACAGTTTAGTAAACTATTATACGCTCACAAACTAGCTTTTAAAAAATCAGAAGATA
CATCTTCCTCTGGAGATATTAGCCACTTCCAAGCGCTTATGACAGCTATGGCGGCAACGATTGGTATGGGAAATA
TAGCTGGTGTTGCAACTGCTGTGACGATCGGTGGACCTGGTGCAATCTTTTGGATGTGGATTACTGCTTTGTTTG
GAATGGCCCAAAA

166. *Bacillus anthracis* Coda-Cerva (SEQ ID NO. 166)

CTNTNCNCGCTTTAAATAGCGTAGAGGCAAAACGAGCACCGAAGGAGCAAATCCGCTACTATAGCGGATAATCTC
TCAGGTAAAAGGACAGAGACAAGCGAAAGAAAATGCCGATTTGTATCGGTTTATTTTTCTATCCCTTGTTTCTCC
AGAGACCATTTCATTTACTTGAAGTGGTTTTTATTTTTTCTAAAAAAGGAGAATAAAGATGGAGACAGTAAGTAA
AGTATTAGAACAAATCAATCACTATGTGTGGGGATTACCAACGTTATTGTTACTCGTTGGTACTGGTATTATTCT
CACAGTGCGTTTAAAAGGTTTACAGTTTAGTAAACTATTATACGCTCACAAACTAGCTTTTAAAAAATCAGAAGA
TACATCTTCCTCTGGAGATATTAGCCACTTCCAAGCGCTTATGACAGCTATGGCGGCAACGATTGGTATGGGAAA
TATAGCTGGTGTTGCAACTGCTGTGACGATCGGTGGACCTGGTGCAATCTTTTGGATGTGGATTACTGCTTTGTT
TGGAATGGCCCAAAAA

167. *Bacillus anthracis* 2054H82 (SEQ ID NO. 167)

TNCNCGCTTTNAATAGCGTAGAGGCAAAACGAGCACCGAAGGAGCAAATCCGCTACTATAGCGGATAATCTCTCA
GGTAAAAGGACAGAGACAAGCGAAAGAAAATGCCGATTTGTATCGGTTTATTTTTCTATCCCTTGTTTCTCCAGA
GACCATTTCATTTACTTGAAGTGGTTTTTATTTTTTCTAAAAAAGGAGAATAAAGATGGAGACAGTAAGTAAAGT
ATTAGAACAAATCAATCACTATGTGTGGGGATTACCAACGTTATTGTTACTCGTTGGTACTGGTATTATTCTCAC
AGTGCGTTTAAAAGGTTTACAGTTTAGTAAACTATTATACGCTCACAAACTAGCTTTTAAAAAATCAGAAGATAC
ATCTTCCTCTGGAGATATTAGCCACTTCCAAGCGCTTATGACAGCTATGGCGGCAACGATTGGTATGGGAAATAT
AGCTGGTGTTGCAACTGCTGTGACGATCGGTGGACCTGGTGCAATCTTTTGGATGTGGATTACTGCTTTGTTTGG
AATGGCCNAAAA

168. *Bacillus cereus* ATCC 10987 (SEQ ID NO. 168) BCER10987

TGCTTGCTAGAGCGCGGAGGAAAACGAGCACCGAAGGAGCAAATCCGCTACTTTAGCGGATAATCTCTCAGGTAA
AAGGACAGAGACAAGCGAAAGAAAAAGCCGATTGTATCGGTTTATTTTTCTATCCCTTGTTTCTCCAGAGACCAT
TTCATTTACTTGAAGTGGTTTTTATTTTTTCTAAAAAAGGAGAATAAAGATGGAGACAGTAAGTAAAGTATTAGA
ACAACTGAATCAATACGTGTGGGGATTACCAACTTTGTTGCTACTCGTTGGAACAGGTATCATTCTCACAGTGCG
TTTAAAAGGTTTACAGTTTAGTAAACTATTATACGCTCACAAACTAGCATTTAAAAAATCAGAAGATGCCTCTTC
TTCTGGAGATATTAGTCACTTCCAAGCACTTATGACAGCTATGGCCGCAACGATTGGTATGGGAAATATAGCCGG
TGTTGCAACAGCTGTTACAATTGGTGGTCCTGGTGCAATATTTTGGATGTGGATTACCGCTTTATTTGGAATGGC
CCAAAA

169. *Bacillus cereus* ATCC 14579 (SEQ ID NO. 169)BCER14579

TAGCAGTCGCGGCGGAAAAACGAGCACCGAAGGAGCAAATCCGCTACTTTAGCGGATAATCTCTCAGGTAAAAGG
ACAGAGACAAGCGAAAGAAAAAGCCGATTGTATCGGTTTATTTTTCTATCCCTTGTTTCTCCAGAGACCATTTCA
TTTACTTGAAGTGGTTTTTATTTTTTCTAAAAAAGGAGAATAAAGATGGAGACAGTAAGTAAAGTATTAGAACAA
CTAAATCAATACGTGTGGGGATTACCAACTTTGTTGCTACTCGTTGGAACAGGTATCATTCTCACAGTGCGTTTG
AAAGGTTTACAGTTTAGTAAACTATTATACGCTCACAAACTAGCGTTTAAAAAATCAGAAGATACTTCTTCTTCT
GGAGATATTAGTCACTTCCAAGCACTCATGACAGCTATGGCCGCAACGATTGGTATGGGTAATATAGCCGGTGTT
GCAACAGCGGTTACAATTGGTGGTCCTGGTGCAATATTTTGGATGTGGATTACCGCTTTATTTGGAATGGCCCAA
AA

170. *Bacillus thuringiensis* serovar *israelensis* BTHUISR (SEQ ID NO. 170)

TATAGCGCAGAGGAAAACGAGCACCGAAGGAGCAAATCCGCTACTATAGCGGATAATCTCTCAGGTAAAAGGACA
GAGACAAGCGAAAGAAAATGCCGATTTGTATCGGTTTATTTTTCTATCCCTTGTTTCTCCAGAGACCATTTCATT
TACTTGAAGTGGTTTTTATTTTTTTCTAAAAAAGGAGAATACAGATGGAGACAGTAAGTAAAGTGTTAGAACAAA
TCAATCACTATGTGTGGGGACTACCAACGTTGTTGTTACTCGTTGGTACTGGTATCATTCTCACAGTGCGTTTAA
AAGGTTTACAGTTTAGTAAACTATTATACGCTCACAAACTAGCTTTTAAAAAATCAGAAGATACATCTTCTTCTG
GAGATATTAGCCACTTCCAAGCGCTTATGACAGCTATGGCGGCAACGATTGGTATGGGAAATATCGCTGGTGTTG
CAACAGCTGTGACAATCGGTGGTCCCGGTGCAATCTTTTGGATGTGGATTACTGCTTTGTTTGGAATGG

171. *Bacillus mycoïdes* serovar MYC003 (SEQ ID NO. 171) BMYC003

GTGGAGGAAAGAGAGCACCGAAGGAGCAAATCCGCTAGCTAGTATAGCGGATAATCTCTCAGGTAAAAGGACAGA
GACAAGCGAAAGAAAATGCCGATTTGGATCGGTTTATTTTTCTATCACTTGTTTCTCCAGAGACCATTTCATTTT
GTGAAGTGGTTTTTTATTTTTTCTAAAAAGGAGAATAAAGATGGAGACAGTAAGTAAAGTACTAGAACAAATCAA
TCATTACGTATGGGGATTACCAACCTTGTTCCTACTCGTTGGAACTGGAATCATTCTTACAGTGCGTCTAAAAGG
TTTACAGTTTAGTAAACTATTATACGCTCACAAACTAGCTTTTAAAAAATCAGAAGACACATCTTCTACTGGAGA
TATTAGTCATTTTCAAGCACTTATGACCGCTATGGCAGCAACAATTGGAATGGGAAATATAGCTGGTGTCGCAAC
CGCTGTTACAATTGGTGGTCCCGGTGCAATATTTTGGATGTGGATTACCGCCCTGTTTGGAATGGCCCAAAA

172. *Bacillus mycoïdes* serovar NRS306 (SEQ ID NO. 172) BMYC306

CGCTTCTATAGCGCGGAGGAAAACGAGCACCGAAGGAGCAAATCCGCTAATCTAGCGGATAATCTCTCAGGTAAA
AGGACAGAGACAAGCGAAAGAAAATGCCGATTTGTATCGGTTTATTTTTCTATCCCTTGTTTCTCCAGAGACCAT
TTCATTTCCTTGAAGTGGTTTTTATTTTTTCTAAAAAAGGAGAATACAGATGGAGACAGTAAGTAAAGTATTAGA
ACAAATTAATCAGTATGTGTGGGGGTTGCCAACTTTATTGCTACTCGTTGGAACTGGTATCATTCTCACAGTGCG
CTTAAAAGGTTTACAGTTTAGTAAACTAATATACGCTCACAAACTTGCTTTTAAAAAATCAGAGGATACATCATC
TTCTGGAGATATTAGTCACTTCCAAGCACTGATGACGGCTATGGCTGCAACGATTGGTATGGGAAATATAGCAGG
TGTCGCANCTGCTGTGACGATCGGTGGACCCGGTGCGATCTTCTGGATGTGGATTACCGCGTTGTTTGGAATGGC
CCAAA

173. *Bacillus thuringiensis* serovar *Kurstaki* BTHUKUR (SEQ ID NO. 173)

GAGGAAACAGAGCACCGAAGGAGCAAATCCGCTTATATTAGCGGATAATCTCTCAGGTAAAAGGACAGAGACAAG
CGAAAGAAAACGCCGATTTGTATCGGTTTATTTTTCTATTCCTTGTTTCTCCAGAGACCATTTCATTTATGTGAA
GTGGTTTTTTATTTTTTCTAAAAGGAGAATAAAGATGGAGACAGTAAGTAAAGTATTAGAACAAATCAATCACTA
CGTATGGGGATTACCGACCTTATTCCTTCTAATCGGAACTGGAATCATTCTCACAGTGCGCCTAAAAGGTTTACA
GTTTAGTAGACTATTATACGCTCACAAACTAGCATTTCGAAAATCAGAAGACACATCTTCTTTGGGAGATATTAG
TCATTTCCAAGCACTCATGACAGCAATGGCCGCAACTATTGGGATGGGAAATATAGCCGGTGTCGCAACAGCTGT
TACAATCGGTGGGCCAGGGGCAATATTTTGGATGTGGATCACTGCCTTGTTTGGAATGGCCCAAA

174. Enterococcus faecium (SEQ ID NO. 174) FCM

GACGGAATTCTGGAGAGACCTTATTAGGCGCCGAAGGGGCAAGGCATACTGCTCAATCTCTCAGGCAAAAGGACA
GAAGGTAGAATACAAACACCATTAAGAACAGTCTTAGTCTTTTTTGTGTTTGCTGTTTTATCATTGCTTCAGAAG
TTGTCTCAAAGAAAGAGATAGCTTTTTTCTTTTGGCGTCTTCGATGACTTTTAGGAGAGAAAGATGATAGCACTC
GTTAAATTAATTGATAACCTTGTTTGGGGACCGCCCCTCTTAATTTTATTGGTTGGGACGGGGATTTACCTTACC
AGTCATTTAGGATTAATTCAAATCTTAAAACTACCAAGAGCCTTTAAACTCATTTTTTCAGATGACGAAGGACAT
GGAGATATTTCATCCTTTGCTGCTCTTGCAACTGCCCTTGCCGCTACTGTCGGAACTGGTAACATTGTTGGGGTT
GCCACTGCTATCAAGTCTGGTAGTCCTGGAGCGCTCTTTTGGATGTGGGTTGCCGCTTTTTTTGGAATGGCAACA
AAATACGC

175. Enterococcus casseliflavus (SEQ ID NO. 175)ECAS

GNACCGGAATTCTGAGAGACCTTATTAGGGCGCCGGAAGGGGCAAGGCATACTGCTCAATCTCTCAGGCNAAAGG
NCAGAAGGTAAAATACAAACACCATTAAGAACAGTCTTAGTCTTTTTTGTGTTTGCTGTTTTATCATTGCTTCAG
AAGTTGTCTCAAAGAAAGAGATAGCTTTTTTCTTTTGGCGTCTTCGATGACTTTTAGGAGAGAAAGATGATAGCA
CTCGTTAAATTAATTGATAACCTTGTTTGGGGACCGCCCCTCTTAATTTTATTGGTTGGGACGGGGATTTACCTT
ACCAGTCATTTAGGATTAATTCAAATCTTAAAACTACCAAGAGCCTTTAAACTCATTTTTTCAGATGACGAAGGA
CATGGAGATATTTCATCCTTTGCTGCTCTTGCAACTGCCCTTGCCGCTACTGTCGGAACTGGTAACATTGTTGGG
GTTGCCACTGCTATCAAGTCTGGTGGTCCTGGAGCGCTCTTTTGGATGTGGGTTGCCGCTTTTTTTGGAATGGCC
ACAAAATACGC

176. Enterococcus flavescens (SEQ ID NO. 176) EFLA

AGGCGCCGAAGGGGCAAGGCATACTGCTCAATCTCTCAGGCAAAAGGACAGAAGGTAAAATACAAACACCATTAA
GAACAGTCTTAGTCTTTTTTGTGTTTGCTGTTTTATCATTGCTTCAGAAGTTGTCTCAAAGAAAGAGATAGCTTT
TTTCTTTTGGCGTCTTCGATGACTTTTAGGAGAGAAAGATGATAGCACTCGTTAAATTAATTGATAACCTTGTTT
GGGGACCGCCCCTCTTAATTTTATTGGTTGGGACGGGGATTTACCTTACCAGTCATTTAGGATTAATTCAAATCT
TAAAACTACCAAGAGCCTTTAAACTCATTTTTTCAGATGACGAAGGACATGGAGATATTTCATCCTTTGCTGCTC
TTGCAACTGCCCTTGCCGCTACTGTCGGAACTGGTAACATTGTTGGGGTTGCCACTGCTATCAAGTCTGGTGGTC
CTGGAGCGCTCTTTTGGATGTGGGTTGCCGCTTTTTTTGGTATGGCCACAAAATACGC

177. Enterococcus gallinarum (SEQ ID NO. 177) EGAL

GAACGGAATTCTGGAGAGACCGTAAAGGCACCGAAGGGGCAAGGCAGGTAACTGCTCAAACTCTCAGGTAAAAGG
ACAGAGCTAGGATAGACCGCTTTTTGGCATTTATCTAAGCATTCCAGAGTACATGTATCTTGCATGTACTCTTTC
TTTTGGGGTTGAAAGATAGGAGAAGGACATGTTAGAATTGCTTAAAGCGCTTGATGCTTTTGCTTGGGGGCCTCC
CCTCTTGATCTTATTGGTCGGAACGGGTATCTATTTGACCATCCGACTGGGCCTTTTGCAGGTTACTCGTCTCCC
TAAGGCCTTTCAGTTGATCTTTACCAAGGACAAGGGGCACGGCGATGTGTCGAGCTTTGCTGCTCTCTGTACGGC
TCTAGCAGCCACAGTTGGTACGGGAAATATCATCGGGGTAGCGACAGCCATTAAGGTTGGAGGACCAGGGGCCCT
CTTTTGGATGTGGATGGCGGCCTTCTTTGGAATGGCAACTAAATACGC

178. Enterococcus raffinosus (SEQ ID NO. 178) ERAF

GACGGAATTCTGGAGAGACCGTAAAGGCACCGAAGGGGCAAGGCAGGTAACTGCTCAAACTCTCAGGTAAAAGGA
CAGAGCTAGGATAGACCGCTTTTTGGCATTTATCTAAGCATTCCAGAGTACATGTATCTTGCATGTACTCTTTCT
TTTGGGGTTGAAAGATAGGAGAAGGACATGTTAGAATTGCTTAAAGCGCTTGATGCTTTTGCTTGGGGGCCTCCC
CTCTTGATCTTATTGGTCGGAACGGGTATCTATTTGACCATCCGACTGGGCCTTTTGCAGGTTACTCGTCTCCCT
AAGGCCTTTCAGTTGATCTTTACCAAGGACAAGGGGCACGGCGATGTGTCGAGCTTTGCTGCTCTCTGTACGGCT
CTAGCAGCCACAGTTGGTACGGGAAATATCATCGGGGTAGCGACAGCCATTAAGGTTGGAGGACCAGGGGCCCTC
TTTTGGATGTGGATGGCGGCCTTCTTTGGAATGGCCACCAAATACGC

179. Streptococcus mitis (SEQ ID NO. 179) SMIT

ATNTTAAGGCACCCAAGGGCAAGGTCAGGCAACTGCTCAAACTCTCAGGTAAAAGGACAGAGCTAGGATAGACCG
CTTTTTAGCATTTATCTAAGCATTCCAGAGTACATGTATCTTGCATGTGCTCTTTCTTTTGGGGTTGAAAAGATA
GGAGAAGGAAATGTTAGAATTGCTTAAATCAATTGATGCTTTTGCTTGGGGTCCACCCCTCTTGATTCTATTGGT
CGGGACAGGGATTTACCTAACTGCTCGTCTAGGCCTCTTGCAGGTTTTGCGTTTGCCTAAGGCCTTTCAGCTTAT
TTTTACTAAGGACAAGGGGCATGGCGATGTATCCAGCTTTGCGGCCTTGTGTACAGCCCTAGCAGCGACAGTTGG
TACGGGAAATATTATCGGGGTGGCGACGGCTATCAAGGTCGGTGGCCCAGGAGCCCTCTTTTGGATGTGGATGGC
CGCTTTCTTTGGAATGGCCCAAAATACCGC

180. Streptococcus canis (SEQ ID NO. 180) SCAN

NTAGTNCTTTTTAATGACACTAGTGACCTTTCGTTAGTATGTTTTTAAGGACTGAGTATTGTAATACTAACATGA
AAGAACTAGACAGGCGCCGAAGGGGCAAGGCTAGACACACAGCTAGCTCAAACTCTCAGGCAAAAGGACAGAAGA
TAAGAATCGATTAACAGGTAAGGTGTATTATCTTTGTCAGTCTTCTTATCACTTTTCAGGAGTTATCACTACGAT
AACTCCTTTTTTCTATTCTAACTGTCATCATAGGACGCTATGTTTTATTAGGAGACTTATTCGTATATGCTAAAC
TTTTTTACAATGCTAGATGATATGGTCTGGGGTGCCCCACTGCTTATTCTGTTGGTGGGAACAGGGATTTATTTA
ACTGTTCGGCTTGGCTTACTCCAGGTTTTAAAATTACCTAAAGCCTTTAAATTAATTTTCGCAGACGATAAAGGT
CAAGGGGATATTTCTAGTTTTGCCGCTCTTGCTACTGCTCTTGCAGCAACAGTAGGTACTGGTAACATCGTTGGT
GTAGCAACAGCTATCAAAGCTGGTGGTCCTGGAGCCCTATTTTGGATGTGGATTGCTGCTTTCTTTGGAATGG

Figure 7: Molecular marker IV (putative GTP-binding factor plus 160 nt downstream this ORF) sequences amplified from Gram-positive bacteria (SEQ ID NOs 181-193)

181. Listeria monocytogenes (SEQ ID NO. 181)

GTTAGAAAAAGGAAGTTCTATTGTAGCATCGCCAAAAATCCATCAAACCTTATTAGATAACTACCTGCCTTAAAG
AAAGCGCTCAACATAAAAAAAACTTGTTTTCAGAAAATAAAAATCGTGCCAAATCGGCTCAGCTATGCTATAATAG
GTAAGTTGATTTAAACGAGACGATAGCGACGGAGGAAAATAAATCTATTTTCCTCTTTCTTTTGGCTAATCTTCA
CGATAAATGTTTGGATTTTTAATTTAGGAGGAAACAAGATTGAATTTAAGAAATGATATTCGTAATGTAGCAATT
ATTGCCCACGTTGACCATGGTAAAACAACTCTAGTAGACCAATTATTACGCCAGTCAGGCACATTCCGCGACAAT
GAAACAGTTGCAGAACGCGCAATGGACAACAATGATTTAGAAAGAGAACGCGGTATTACAATTTTAGCGAAAAAT
ACAGCGATTAAGTATGAAGATACACGTGTAAACATCATGGATACACCTGGACACGCCGATTTCGGTGGAGAAGTA
GAACGTATCATGAAAATGGTTGATGGTGTTCTTTTAGTAGTGGACGCGTATGAAGGTACGATGCCTCAAACACGT
TTTGTACTAAAAAAAGCACTAGAACAAAACCTAACTCCAATCGTAGTAGTAAACAAAATTGACCGTGACTTTGCT
CGCCCAGAAGAAGTTGTTGATGAAGTATTAGAATTATTCATCGAACTAGGCGCAAACGACGATCAATTAGAATTC
CCAGTTGTTTATGCTTCTGCAATCAACGGAACTTCAAGCTATGATTCCGATCCAGCAGAACAAAAAGAAACAATG
AAACCACTTTTAGACACAATTATCGAACATATCCCGGCTCCAGTTGATAATAGCGACGAACCATTACAATTCCAA
GTATCATTACTTGATTATAATGACTATGTTGGTCGTATCGGTATTGGCCGCGTATTCCGTGGAACAATGCACGTG
GGACAAACAGTTGCTTTAATTAAACTTGATGGCACAGTAAAACAATTCCGTGTAACGAAAATGTTCGGTTTCTTC
GGACTAAAACGTGACGAAATTAAAGAAGCAAAAGCTGGTGATTTAGTAGCATTAGCAGGTATGGAAGACATCTTC
GTTGGTGAAACAGTAACACCATTTGACCACCAAGAAGCACTTCCGTTATTACGTATTGATGAGCCAACCTTGCAA
ATGACTTTCGTAACAAATAACAGTCCTTTCGCTGGTCGTGAAGGTAAACACGTAACAAGCCGTAAAATTGAAGAA
CGTTTACTTGCAGAGCTTCAAACGGACGTATCTTTACGCGTAGAGCCAACAGCTTCCCCTGACGCTTGGGTAGTT
TCTGGTCGTGGTGAGCTTCATTTATCCATTTTGATCGAAACAATGCGTCGCGAAGGTTATGAATTACAAGTTTCT
AAACCAGAAGTAATCATCCGTGAAATTGATGGCGTGAAATGTGAACCAGTAGAAGATGTTCAAATTGATACTCCA
GAAGAATTCATGGGTTCCGTTATTGAATCTATCAGCCAACGTAAAGGCGAAATGAAAAACATGATTAACGATGGC
AACGGACAAGTTCGTTTACAATTCATGGTTCCAGCTCGTGGCTTAATCGGTTATACAACTGATTTCCTTTCAATG
ACTCGTGGTTATGGTATTATCAACCACACA

182. Listeria innocua (SEQ ID NO. 182)

ATAAAAAAACTCATTTTCAGAAAATAAAAATAGTGCTAAATCCGCTTAGCTATGCTATAATAGGTAAGTTGATTT
AAACGAGACGATAGCGACGGAGGAAAATAAATCTATTTTCCTCTTTCTTTTGGCTAATCTTCACGATAAATGTTT
GGATTTTTAATTTAGGAGGAAACAAGATTGAATTTAAGAAACGATATTCGTAATGTAGCAATTATTGCCCACGTT
GACCATGGTAAAACTACACTAGTAGACCAATTACTACGCCAATCAGGTACTTTCCGCGACAATGAAACAGTTGCA
GAACGTGCAATGGACAACAATGATTTAGAAAGAGAACGCGGTATTACAATTTTAGCGAAAAATACAGCAATTAAG
TATGAAGATACACGCGTAAACATCATGGATACACCTGGACACGCCGATTTTGGTGGAGAAGTAGAACGTATCATG
AAAATGGTTGATGGTGTTCTTTTAGTAGTGGACGCGTATGAAGGTACTATGCCTCAAACACGTTTTGTACTAAAA
AAAGCACTAGAACAAAACCTAACTCCAATCGTAGTAGTAAACAAAATTGACCGTGACTTTGCTCGCCCAGAAGAA
GTTGTTGATGAAGTACTAGAATTATTCATCGAACTAGGTGCGAACGACGATCAATTAGAATTCCCAGTTGTTTAT
GCTTCTGCAATTAACGGAACTTCAAGCTTTGAATCCGACCCAGCAGAACAAAAAGAAACAATGAAACCACTTTTA
GACACTATTATTGAACATATTCCAGCTCCAGTTGATAACAGCGACGAGCCATTACAATTCCAAGTTTCTTTACTT

GATTATAATGACTATGTTGGTCGTATTGGTATTGGCCGCGTTTTCCGTGGAACAATGCACGTAGGACAAACAGTT
GCCTTAATTAAACTAGACGGCACAGTAAAACAATTCCGTGTAACGAAAATGTTCGGTTTCTTCGGACTAAAACGT
GACGAAATTAAAGAAGCAAAAGCGGGTGACTTAGTAGCACTTGCAGGAATGGAAGACATCTTCGTCGGTGAAACA
GTAACACCATTTGACCACCAAGAAGCACTTCCACTTTTACGTATTGATGAGCCAACCTTGCAAATGACTTTTGTA
ACAAATAACAGTCCTTTCGCAGGCCGTGAAGGTAAACACGTAACAAGCCGTAAAATTGAAGAACGCTTACTTGCA
GAACTTCAAACGGATGTATCTTTACGCGTTGAACCAACAGCTTCTCCAGACGCATGGGTAGTATCTGGTCGTGGT
GAGCTTCACTTGTCTATCTTAATTGAAACGATGCGTCGTGAAGGTTATGAGTTACAAGTTTCTAAACCAGAAGTA
ATCATCCGTGAAATCGATGGCGTGAAATGTGAACCAGTAGAAGACGTTCAAATTGATACTCCAGAAGAATTCATG
GGTTCAGTTATTGAATCTATCAGCCAACGTAAAGGCGAAATGAAAAACATGATTAACGACGGCAATGGCCAAGTT
CGTTTACAATTCATGGTTCCAGCTCGTGGATTAATCGGTTATACAACTGATTTCCTTTCAATGACACGTGGTTAT
GGTATTATCAACCATACATTCGATAGCTACCAACCAATCCAAAAA

183. ***Bacillus cereus*** **(SEQ ID NO. 183)**

TTACTTTCACAAAAGTAAGAATACAACTATATTTTCATTCTTGCTTTTATTTTAATTGCTATTGTATCCCCTTCG
CTCTTATAATAGAGAAGGATTAAAAAGACATTAGGAGTTGGACATGTTGAAAAAACGACAAGATTTACGTAATAT
AGCAATTATTGCCCACGTTGACCATGGTAAAACAACACTTGTTGACCAGTTATTACGTCAAGCGGGGACTTTCCG
TGCGAACGAACACGTTGAAGAACGCGCAATGGATTCAAATGATCTAGAAAGAGAACGCGGTATTACAATTTTAGC
GAAAAATACAGCGATTCACTATGAAGATAAAAGAATTAACATTTTAGATACACCTGGTCACGCTGACTTCGGTGG
AGAAGTAGAACGTATCATGAAAATGGTTGATGGTGTTTTACTTGTTGTTGATGCATATGAAGGTTGTATGCCACA
AACACGATTTGTTTTAAAGAAAGCTCTTGAGCAAAACTTAACTCCAATCGTAGTTGTAAACAAAATTGACCGTGA
CTTCGCTCGTCCAGATGAAGTAGTTGATGAAGTAATCGACTTATTCATTGAGCTTGGTGCAAACGAAGATCAATT
AGAGTTCCCAGTTGTATTTGCATCAGCAATGAACGGAACAGCAAGCTTAGATTCAAATCCAGCAAATCAAGAAGA
GAATATGAAATCATTATTCGATACAATTATCGAACATATTCCAGCACCAATTGATAACAGCGAAGAGCCACTTCA
ATTCCAAGTAGCACTTCTTGATTACAACGACTACGTTGGACGTATTGGAGTTGGTCGCGTATTCCGCGGTACAAT
GAAGGTTGGACAACAAGTTGCTTTAATGAAAGTAGACGGAAGCGTGAAGCAATTCCGCGTAACGAAATTATTCGG
TTACATGGGATTAAAACGTCAAGAAATTGAAGAAGCAAAAGCAGGGGACTTAGTAGCCGTTTCTGGTATGGAAGA
CATTAACGTAGGTGAAACAGTATGTCCAGTTGAACATCAAGATGCGTTACCATTATTACGTATTGATGAGCCAAC
ACTACAAATGACGTTCCTTGTAAATAACAGCCCATTTGCAGGTCGTGAAGGTAAATACATTACATCTCGTAAAAT
TGAAGAGCGTCTTCGTTCACAATTAGAAACAGATGTAAGTTTACGTGTAGATAATACAGATTCTCCTGATGCGTG
GATCGTATCTGGACGTGGGGAACTACATTTATCTATCTTAATTGAAAACATGCGTCGTGAAGGTTATGAATTACA
AGTATCTAAGCCAGAAGTAATCATTAAAGAAGTTGATGGCGTAAGATGTGAGCCTGTAGAGCGCGTACAAATCGA
TGTACCTGAAGAATACACTGGTTCTATTAT

184. ***Bacillus anthracis*** **(SEQ ID NO. 184)**

CTATATTTTCATTCTTGATTTTATTTTAATTGCTATTGTATCCCCTTCGCTCTTATAATAGAGAAGGATTAAAAA
GACATTAGGAGTTGGACATGTTGAAAAAACGACAAGATTTACGTAATATAGCAATTATTGCCCACGTTGACCATG
GTAAAACAACACTTGTTGACCAGTTATTACGTCAAGCGGGGACTTTCCGTGCGAACGAACACGTTGAAGAACGCG
CAATGGATTCAAATGATCTAGAAAGAGAACGCGGTATTACAATTTTAGCGAAAAATACTGCGATTCACTATGAAG
ATAAAAGAATTAACATTTTAGATACACCAGGTCACGCTGACTTCGGTGGAGAAGTAGAACGTATTATGAAAATGG
TTGATGGTGTATTACTTGTTGTTGATGCATATGAAGGTTGTATGCCACAAACACGATTTGTTTTAAAGAAAGCTC

TTGAGCAAAACTTAACTCCAATCGTAGTTGTAAATAAAATTGACCGTGACTTCGCTCGTCCTGATGAAGTAGTTG
ATGAAGTAATCGACTTATTCATCGAACTTGGTGCAAACGAAGATCAATTAGAGTTCCCAGTTGTATTTGCATCAG
CAATGAACGGAACAGCAAGCTTAGATTCAAACCCAGCAAATCAAGAAGAGAATATGAAATCATTATTTGATACAA
TTATTGAACATATTCCTGCACCAATTGATAACAGCGAAGAGCCACTTCAATTCCAAGTAGCACTTCTTGATTACA
ACGACTATGTTGGACGTATCGGGGTTGGACGCGTATTCCGCGGTACAATGAAGGTTGGACAACAAGTTGCTTTAA
TGAAAGTAGACGGAAGTGTAAAACAATTCCGCGTAACGAAACTATTTGGTTATATGGGATTAAAACGTCAAGAAA
TTGAAGAAGCAAAAGCTGGAGACTTAGTAGCTGTTTCTGGTATGGAAGACATTAACGTAGGTGAAACAGTATGTC
CAGTTGAACATCAAGATGCGTTACCATTATTACGTATTGATGAGCCAACACTACAAATGACATTCCTTGTAAATA
ACAGCCCATTTGCAGGTCGTGAAGGTAAATACATTACATCTCGTAAAATTGAAGAGCGTCTTCGTTCACAATTAG
AAACAGATGTAAGTTTACGCGTAGATAATACAGAATCTCCTGATGCGTGGATCGTATCTGGACGTGGGGAACTAC
ATTTATCTATCTTAATCGAAAACATGCGTCGTGAAGGTTATGAACTACAAGTATCTAAACCAGAAGTAATCATTA
AAGAAGTTGATGGCGTAAGATGTGAGCCTGTAGAGCGTGTGCAAATTGATGTACCTGAAGAATACACTGGTTCTA
TTATGGAATCTATGGGTGCACGTAAAGGTGAAATGTTAGATATGGTGAATAACGGAAACGGTCAAGTTCGCCTTA
CTTTCATGGTTCCAGCACGTGGTTTAATTGGTTACACAACAGAATTCTTAACATTAACTCGTGGTTACGGTATTT
TAAACCATACATTCGATTGCTACCAACCAGTACACGCTGGACAAGTTGGTGGACGTCGTCAAGGTGTTCTAGTTT
CACTTGAAACAGGAAAAGCATCACAATACGGTATTATGCAAGTTGAAGACCGTGGTGTAATCTTCGTTGAACCAG
GTACAGAAGTATATGCTGGTATGA
TTGTTG

185. ***Staphylococcus aureus*** **(SEQ ID NO. 185)**

TCAATTATATGATATAATAAAAAAGTTGTAATTAAAAGTGGGATTTTACTTAAGAAAGAAGGAAACTATTTATAT
GACTAATAAAAGAGAAGATGTCCGCAATATAGCAATTATTGCTCACGTTGACCATGGTAAAACAACTTTAGTAGA
TGAGTTGTTAAAACAATCTGGTATATTCAGAGAAAATGAACATGTCGATGAACGTGCAATGGACTCTAACGATAT
CGAAAGAGAGCGTGGAATTACGATTCTAGCCAAAAATACGGCTGTTGATTATAAAGGTACACGTATTAATATTTT
GGATACACCAGGACATGCAGACTTTGGTGGAGAAGTAGAACGTATTATGAAAATGGTTGATGGGGTTGTCTTAGT
AGTAGATGCGTATGAAGGTACAATGCCTCAAACACGTTTTGTACTTAAAAAAGCGCTAGAACAAAACCTGAAACC
TGTTGTTGTTGTTAATAAAATTGATAAACCATCAGCACGTCCAGAGGGTGTTGTAGATGAAGTTTTAGATTTATT
TATTGAATTAGAAGCAAACGATGAACAATTAGAATTCCCTGTTGTTTATGCTTCAGCAGTAAATGGAACAGCTAG
CTTAGATCCTGAAAAACAAGATGATAATTTACAATCATTATATGAAACAATTATTGATTATGTACCAGCTCCAAT
TGATAACAGTGATGAGCCATTACAATTCCAAGTAGCATTGTTGGACTACAATGATTATGTTGGACGTATTGGTAT
TGGTCGTGTATTCAGAGGTAAAATGCGTGTCGGAGATAATGTATCACTAATTAAATTAGACGGTACAGTGAAAAA
CTTCCGTGTAACTAAAATCTTTGGTTACTTTGGATTAAAACGTTTAGAAATTGAAGAAGCACAAGCTGGAGATTT
AATTGCTGTTTCAGGTATGGAAGACATTAATGTTGGTGAAACTGTAACACCACATGACCATCAAGAAGCATTGCC
AGTTCTACGTATTGATGAGCCTACTCTTGAAATGACATTTAAAGTTAACAATTCTCCATTTGCTGGCCGTGAAGG
TGACTTTGTAACAGCACGTCAAATTCAAGAACGTTTAAATCAACAATTAGAAACAGATGTATCTTTGAAAGTTTC
TAACACAGATTCTCCAGATACATGGGTAGTTGCTGGTCGCGGTGAATTGCATTTATCAATCCTTATTGAAAATAT
GCGTCGTGAAGGTTATGAATTACAAGTTTCAAAACCACAAGTAATTATTAAAGAAATAGATGGTGTAATG

186. ***Staphylococcus epidermidis*** **(SEQ ID NO. 186)**

ACCCCACCTTTTACTTATCTTTTCAATAATATATGATATAATAAAACAGTTGCAATTAAAAGTGGGAGTATACAC
AAGAAAGGAATTTATAAAATGACTAATTTAAGAGAAGATGTTCGTAATATAGCGATTATTGCGCATGTCGACCAT
GGTAAAACAACATTAGTAGACCAGTTGCTTAAACAATCAGGTATATTTCGTGAAAACGAACATGTCGACGAGCGT
GCAATGGACTCTAATGATTTAGAAAGAGAACGTGGTATTACGATTCTTGCTAAGAATACAGCGATAGATTATAAA
GGAACGCGTATCAATATATTAGACACACCTGGCCACGCCGATTTTGGTGGTGAAGTTGAACGTATCATGAAAATG
GTTGACGGTGTCGTACTAGTGGTTGACGCATATGAAGGTACAATGCCTCAAACTCGTTTTGTTCTTAAAAAAGCT
TTAGAACAAAACTTAAAACCGGTTGTAGTTGTGAATAAAATTGATAAACCAGCTGCTAGACCTGAGGGAGTTGTA
GATGAAGTATTAGACTTATTCATTGAATTGGAAGCGAATGATGAGCAATTAGACTTCCCAGTTGTTTATGCTTCA
GCTGTGAATGGAACAGCAAGTTTAGACTCTGAAAAGCAAGACGAAAATATGCAATCCCTATACGAGACGATTATT
GACTATGTACCGGCACCAGTAGATAATTCAGATGAACCATTACAATTCCAAATTGCTTTACTAGATTATAATGAT
TATGTAGGTCGTATAGGCGTTGGACGTGTGTTCAGAGGTAAAATGCGTGTAGGTGATAATGTATCACTAATTAAA
TTAGATGGTACAGTTAAGAACTTTCGTGTGACGAAAATATTTGGTTACTTTGGTCTTAAACGTGAAGAAATTGAA
GAAGCACAAGCAGGAGACTTAATAGCTGTTTCAGGTATGGAAGATATTAACGTTGGTGAAACAGTTACACCACAT
GATCATCGTGACCCATTACCGGTGTTACGTATTGATGAACCAACCCTAGAAATGACTTTTAAAGTAAATAACTCT
CCGTTTGCTGGACGTGAAGGTGATTATGTAACAGCTCGACAAATTCAAGAAAGATTAGATCAACAACTTGAAACA
GATGTTTCTTTAAAAGTTACACCTACTGATCAACCAGATTCATGGGTTGTTGCTGGTCGTGGTGAACTACACTTG
TCTATTCTTATTGAAAACATGAGACGTGAAGGCTTTGAATTACAGGTTTCTAAACCTCAAGTTATTTTAAGAGAA
ATCGATGGTGTGTTAAGTGAACCATTTGAGCGTGTACAATGTGAA

187. ***Bacillus subtilis*** **(SEQ ID NO. 187)**

GAAAAACGTGACGCTTTTAAAGAGGATGTGTGATATAATATGAAAGTTATCTAATTTTTTTAGGAGATGAAAAAG
TGAAACTTCGAAATGATCTTCGCAACATCGCGATTATTGCCCACGTTGACCATGGGAAAACGACTCTAGTCGATC
AGCTTTTACATCAGGCTGGTACGTTCCGTGCCAACGAACAGGTTGCTGAACGCGCAATGGACTCTAATGATCTTG
AACGCGAACGCGGCATTACAATATTGGCGAAAAATACTGCGATTAACTATAAAGATACACGTATCAATATTTTGG
ACACCCCTGGACATGCAGACTTTGGGGGAGAAGTAGAACGGATTATGAAAATGGTTGACGGCGTAGTGCTTGTCG
TTGACGCATATGAAGGCTGTATGCCTCAAACTCGTTTTGTTCTGAAAAAAGCTCTTGAGCAAAACCTGAACCCTG
TTGTTGTTGTAAACAAAATTGACCGTGACTTTGCTCGTCCAGAGGAAGTTATCGATGAAGTTCTGGATCTGTTCA
TTGAGCTTGATGCCAATGAAGAGCAGCTCGAGTTCCCAGTGGTATATGCTTCCGCGATTAATGGAACAGCGAGTC
TTGATCCGAAACAACAGGATGAAAACATGGAAGCTTTATATGAAACCATTATTAAGCATGTTCCGGCACCTGTTG
ATAATGCAGAGGAGCCGCTTCAATTCCAAGTTGCCCTTCTTGACTACAACGACTATGTAGGCCGTATCGGAATCG
GACGCGTATTCCGCGGCACAATGAAAGTCGGACAGCAGGTTTCTCTTATGAAGCTTGACGGAACGGCAAAGTCAT
TCCGTGTTACAAAGATTTTTGGTTTCCAAGGCTTAAAGCGTGTGGAAATTGAAGAAGCAAAAGCGGGAGACCTCG
TTGCGGTTTCCGGGATGGAAGATATCAACGTTGGTGAAACGGTATGTCCTGTAGACCATCAAGATCCGCTTCCGG
TCCTTCGCATTGATGAGCCGACACTTCAAATGACATTTGTCGTGAATAACAGTCCGTTTGCAGGCCGTGAAGGCA
AATATGTAACGGCCCGCAAAATCGAAGAGCGTCTTCAATCACAGCTTCAGACGGATGTGAGCTTGCGTGTTGAGC
CAACAGCTTCTCCTGATGCTTGGGTTGTTTCAGGACGCGGTGAGCTGCACTTGTCAATTTTAATTGAAAATATGC
GTCGTGAGGGCTATGAGCTTCAAGTGTCAAAACCTGAAGTTATTATCAAAGAAATCGACGGCGTACGCTGTGAGC
CTGTTGAACGTGTGCAAATTGATGTTCCTGAAGAGCATACTGGCT

188. ***Streptococcus mutans*** **(SEQ ID NO. 188)**

GGAATGGAAAAGTAAAAGAGAAGAATTAGTTCTTTTTTGAGATAATGACAGGGATTAGTATGAGCTGTTGTCTTT
TGTTTTTGCAATACTGGTTGATTGAGGACTTATTTTATAAAATTTGGAGATACCAAGACTGCGACTTTGCTATCT
TGGTTTTTCTTTTATATTTTAAAACATTTACATATCTCTCCTGAGTTTTTCCCTAATTTTTATGGTATAATAGAT
AAGTTGAAATAAATTAATGTAAAATGTAAGAGGAATTATGACAAATTTTAGAGAAGATATTAGAAATGTTGCTAT
CATTGCCCACGTTGACCATGGGAAAACAACCCTTGTTGATGAGCTCTTAAAACAATCGCATACACTTGATGAGCA
TAAAAAATTAGAAGAACGTGCGATGGACTCTAATGATCTTGAAAAAGAGCGTGGGATTACTATTCTTGCAAAAAA
TACTGCTGTTGCCTACAATGGTGTACGTATTAACATTATGGACACACCAGGACATGCGGATTTTGGTGGAGAAGT
AGAGCGTATCATGAAAATGGTTGATGGGGTTGTTCTTGTTGTTGATGCTTATGAAGGTACCATGCCGCAAACACG
TTTTGTTTTGAAAAAAGCTTTGGAACAAAACCTGGTTCCAATCGTGGTGGTGAATAAGATTGACAAGCCATCAGC
TCGTCCGGCAGAAGTTGTTGATGAAGTTCTTGAACTTTTCATTGAACTTGGAGCAGATGATGACCAGTTAGAGTT
TCCAGTCGTTTACGCTTCGGCGATTAATGGAACTTCTTCATTATCAGATGAACCAGCGGATCAAGAACATACAAT
GGCACCCGTTTTTGATACTATTATTGAGCATATTCCAGCACCGATCGATAATTCAGATCAGCCACTTCAATTTCA
AGTGTCTCTCCTTGATTATAACGACTTTGTTGGACGTATCGGTATTGGGCGAGTCTTCCGTGGTTCTGTTAAAGT
CGGGGATCAAGTGACACTTTCTAAACTTGATGGTACAACAAAGAATTTTCGTGTTACAAAACTTTTCGGTTTCTT
CGGTTTGGAACGTCGTGAGATTAAGGAAGCTAAGGCTGGCGATTTGATTGCTGTTTCAGGTATGGAAGATATCTT
TGTTGGTGAAACGATTACACCAACTGATGCTGTAGAACCACTTCCTATTCTTCACATTGATGAGCCAACTCTGCA
AATGACCTTTTTAGCTAACAATTCCCCTTTTGCAGGCCGTGAAGGTAAATTTGTAACCTCGCGTAAGGTAGAAGA
GCGTTTGTTGGCAGAATTGCAAACAGATGTTTCCCTTCGTGTAGAAGCCACTGACTCACCAGATAAATGGACGGT
TTCAGGTCGTGGGGAGTTACATCTGTCAATCCTTATTGAAACCATGCGCCGTGAAGGATATGAGCTGCAAGTATC
GCGTCCAGAAGTTATTATCAAAGAAATTGATGGCATCAAATGTGAGCCATTTGAACGCGTGCAAATTGACACACC
GGAAGAATACCAAGGTGCTGTTATCCAGTCCCTTTCAGAACGTAAAGGTGAAATGCTTGA

189. ***Streptococcus pneumoniae*** **(SEQ ID NO. 189)**

AAGCGGAGTGAAAACATTTACACTTGCTTGAGTTATGTTATTTATTTGAAATTATGGTATAATCGTTCAGTTAGA
AAATAAATTTTGAATATTATAGAGGAAATCATGACAAAATTAAGAGAAGATATCCGTAACATTGCGATTATCGCC
CACGTTGACCACGGTAAAACAACCCTGGTTGACGAATTATTGAAACAATCAGAAACGCTTGATGCACGTACTGAA
TTGGCAGAGCGTGCTATGGACTCAAACGATATCGAAAAAGAGCGTGGAATCACCATCCTTGCTAAAAATACTGCC
GTTGCTTACAACGGAACTCGTATCAACATTATGGACACACCAGGACACGCGGACTTCGGTGGAGAAGTTGAGCGT
ATCATGAAAATGGTTGACGGTGTTGTCTTGGTCGTAGATGCCTATGAAGGAACCATGCCACAAACTCGTTTCGTA
TTGAAAAAAGCCTTGGAACAAGACCTTGTCCCAATCGTGGTTGTTAACAAAATCGATAAGCCATCAGCTCGTCCA
GCAGAAGTAGTGGATGAAGTCTTGGAACTTTTCATCGAGCTTGGTGCAGATGACGACCAGCTTGATTTCCCAGTG
GTTTATGCTTCAGCGATCAACGGAACTTCTTCATTGTCAGATGATCCAGCTGACCAAGAAGCGACTATGGCACCA
ATCTTTGACACGATTATCGACCATATCCCAGCTCCAGTAGATAACTCAGATGAGCCTTTGCAGTTCCAAGTGTCA
CTTTTGGACTACAATGACTTCGTTGGACGTATCGGTATCGGTCGTGTCTTCCGTGGTACAGTTAAGGTTGGGGAC
CAAGTTACCCTTTCTAAACTTGACGGTACAACTAAAAACTTCCGTGTTACAAAACTCTTCGGTTTCTTTGGTTTG
GAACGTCGTGAAATCCAAGAAGCCAAAGCGGGTGACTTGATTGCCGTTTCAGGTATGGAAGACATCTTTGTCGGT
GAAACCATCACTCCGACAGATGCAGTAGAAGCTCTTCCAATCCTACACATCGATGAGCCAACTCTTCAAATGACT
TTCTTGGTCAACAACTCACCATTTGCTGGTAAAGAAGGTAAATGGGTAACTTCTCGTAAGGTGGAAGAACGCTTG

CAGGCAGAATTGCAAACAGACGTTTCCCTTCGTGTTGACCCAACTGATTCACCAGATAAATGGACTGTTTCAGGA
CGTGGAGAATTGCACTTGTCAATCCTTATCGAAACAATGCGTCGTGAGGGCTATGAACT

190. ***Streptococcus agalactiae*** **(SEQ ID NO. 190)**

AGAAATGAATTAAATTGAAAAAAGTAGAAAATAAATGGCATAAATAATGAAATGATGAAAAGTTTTCTTATCACA
AATAGGCAGTTAATATGAAAACATTTACACTTGTGTAAATTCTGTTTTTTAAGAAAAATTGTGTTATAATTCATA
AGTTAACAGAATTACATTATAAAATAGAGGAAAACATGACAAATTTAAGAACAGATATCCGTAACGTTGCGATCA
TTGCCCACGTTGACCACGGTAAAACAACTCTCGTTGATGAATTATTAAAACAATCACATACTCTTGATGAGCGTA
AAGAGCTTGAAGAACGTGCAATGGATTCAAATGATATCGAAAAAGAACGTGGTATCACCATTCTTGCAAAAAATA
CAGCCGTAGCATACAACGATGTTCGTATCAATATTATGGACACACCTGGTCACGCGGACTTTGGTGGTGAAGTTG
AGCGTATTATGAAAATGGTTGATGGTGTTGTTTTAGTCGTTGATGCCTACGAAGGAACAATGCCACAAACACGTT
TTGTTTTGAAGAAAGCTCTTGAACAAAACTTAATTCCAATCGTTGTTGTAAATAAAATTGATAAGCCGTCAGCTC
GTCCATCAGAGGTTGTTGATGAAGTTCTTGAACTATTTATTGAGCTCGGTGCTGATGATGATCAACTAGATTTCC
CTGTTGTTTATGCTTCAGCTATCAATGGAACATCTTCAATGTCAGATGATCCTTCAGATCAAGAAAAAACAATGG
CACCGATTTTTGATACTATCATTGATCACATTCCAGCCCCAGTTGACAACTCGGAAGAACCACTTCAATTCCAAG
TTTCTCTTCTTGATTACAATGATTTTGTAGGACGTATTGGTATTGGACGTGTTTTCCGCGGGACTGTCAAAGTTG
GAGATCAAGTTACTCTTTCAAAACTTGATGGTACAACTAAAAACTTCCGCGTAACAAAACTTTTTGGTTTCTTTG
GACTTGAACGTAAAGAAATCCAAGAGGCTAAAGCGGGTGATTTAATCGCTGTTTCTGGTATGGAAGATATCTTCG
TTGGTGAGACAGTAACTCCGACAGATGCTATTGAACCACTACCAGTTTTACGTATTGACGAGCCAACACTTCAAA
TGACTTTCTTGGTGAATAATTCACCATTTGCAGGTCGCGAAGGTAAATGGATTACGTCACGTAAGGTTGAAGAAC
GTCTTTTAGCAGAATTACAAACAGACGTTTCTTTACGTGTTGACCCAACAGATTCGCCAGATAAATGGACGGTTT
CAGGGCGTGGAGAATTACATTTATCTATCCTTATTGAAACAATGCGTCGTGAGGGATATGAACTTCAAGTATCAC
GTCCAGAAGTTATCATCAAAGAAATTGATGGTGTTCAATGCGAGCCGTTTGAGCGTGTTCAAATTGATACTCCAG
AAGAATATCAGGGTGCTATTATCCAAAGTTTGTCAGAGCGTAAAGGTGATATGCTTGATATGCAGATGGTTGGTA
ATGGTCAAACGCGTTTGATTTTCTTGATTCCTGCACGTGGTTTGATTGGTTATTCAACAGAGTTTCTTTCAATGA
CACGTGGATATGGTATCATGAATCATACTTTTGACCAGTATCTACCGGTTGTTCAAGGAGAAATTGGTGGTCGTC
ATCGTGGTGCCTTGGTTTCTATTGAAAATGGTAAAGCAACTACATATTCAATTATGCGTATTGAAGAACGTGGGA
CTATCTTTGTAAATCCAGGTATAGAAGTTTATGAAGGAATGATTGTTGGTGAGAATTCTCGTGATAATGACCTCG
GAGTCAATATTACAACTGCTAAACAAATGACAAATGTCCGTTCAGCAACTAAAGATCAAA

191. ***Streptococcus pyogenes*** **(SEQ ID NO. 191)**

GTCTTAAAAGACGGTATTGATTATTGGGATGGCAAAGTTAAACAAACAACCTAGTTAAGAGTAACGTGGAGTTAA
GGGGAATAAAGGCAGTCACTGTCTCAAAAACCTTAATTCCTTTTTTTGCTGTATCCAGACTTGCTGAAAGTCTGA
AAATATTTACAATTGATTAAAACCAGTTTTTTAAAACATTTTGTGTTATACTTATCTAGTTAAAATATATTTACT
TAGAGGAACAAATGACTAACTTAAGAAACGATATCCGTAACGTAGCGATTATTGCCCACGTTGACCACGGAAAAA
CAACACTTGTAGATGAATTATTAAAACAATCCCATACTCTTGATGAGCGTAAAGAGCTTCAAGAGCGTGCCATGG
ATTCCAATGACCTTGAAAAAGAACGTGGGATTACAATCCTTGCGAAAAATACGGCAGTAGCCTATAACGATGTTC
GTATTAACATCATGGATACCCCAGGACACGCGGACTTCGGTGGTGAAGTTGAACGTATCATGAAAATGGTTGACG
GGGTTGTTCTTGTTGTGGATGCCTACGAAGGAACAATGCCCCAGACGCGTTTCGTATTGAAAAAAGCACTTGAGC
AAAACCTTATCCCGATCGTTGTGGTGAACAAGATTGACAAACCTTCAGCTCGTCCAGCAGAAGTTGTAGATGAAG

TGCTTGAATTATTCATCGAACTTGGTGCCGATGATGAGCAATTGGAATTCCCAGTTGTTTACGCATCAGCTATTA
ATGGAACATCATCATTATCAGATGACCCTGCTGACCAAGAGCATACTATGGCACCGATCTTTGATACGATTATTG
ATCATATTCCAGCGCCAGTTGATAATTCAGATGAGCCTTTGCAATTCCAAGTGTCACTTTTGGACTACAACGATT
TCGTAGGTCGTATCGGTATCGGTCGTGTTTTCCGTGGTACTGTTAAAGTGGGTGACCAAGTAACTCTTTCAAAAC
TTGATGGTACCACTAAAAACTTCCGTGTTACAAAACTGTTTGGTTTCTTCGGTTTGGAACGTCGTGAAATTCAAG
AAGCTAAAGCAGGTGACTTGATTGCTGTTTCAGGTATGGAAGATATCTTTGTTGGAGAAACCATTACACCAACTG
ACTGTGTGGAAGCTCTGCCAATTCTTCGTATTGATGAGCCAACACTTCAGATGACTTTCTTGGTCAATAACTCTC
CTTTTGCAGGTCGTGAAGGTAAATGGATCACGTCACGTAAGGTTGAAGAACGTCTTTTAGCAGAATTGCAAACAG
ACGTGTCACTTCGTGTTGACCCAACAGATTCGCCAGATAAATGGACGGTTTCAGGGCGTGGAGAATTGCATTTAT
CTATCCTCATTGAAACCATGCGCCGTGAAGGCTATGAACTTCAAGTATCACGTCCAGAAGTTATCATCAAAGAAA
TTGATGGTGTCAAATGTGAACCGTTTGAGCGTGTTCAAATTGATACACCAGAAGAATATCAGGGTGCAATCATCC

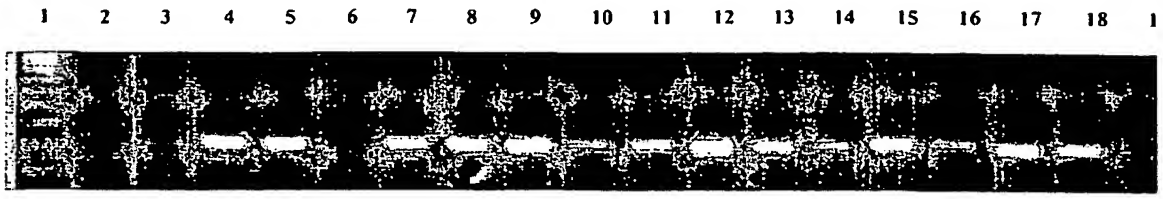
192. ***Enterococcus faecalis*** **(SEQ ID NO. 192)**

CATCACGCAACGGAAATCGGACAAGCAAGCATGGGCGTGCGTATTAGCGGTTGTGCAGGTTTGGAAATTATTGCT
ATGTTAAAAGGCAACCATCATGGCTATTTATCTAATCTAAGTCCTTGGGATTATGCAGCAGGCTTAGTACTTTTG
GAAGAATTTGGGTTTAAATACTCTGGTATTACAGGAAAACCATTAACTTTTGCGGGTCGTGAATACTTTATTGCA
GCAACTCCTGAAACCTATGATGAAGTATTTACCCGATATTTAAATGAATCGGAATAATCAAAGAAGAGCGTTGCT
GAAAGGTAAGGCTCTTCCTCTTTTAAAAGAGAAAAATTTGTAAAAAAAATGTCCTTGTTTTCAGAAAAAGCCGAAT
AATTTCTAAAACTTTCATTATTTTTGCAGGCGAAAGCCTTTTTTTAATGAAAAAAGTTTGCTATAATAAGCAGTC
GGCTTTTATGGACTTAAGTAACATAAGCGTATATAGATAAGGAGCAATTAAATTGAAATACAGAGATGATATTCG
TAACGTGGCAATTATCGCCCACGTTGACCATGGTAAAACAACCTTAGTAGATGAACTTTTAAAACAATCTGACAC
TTTAGATGGACACACACAATTACAAGAACGTGCAATGGATTCCAATGCACTTGAAAGTGAACGTGGAATTACTAT
CTTAGCAAAAAATACAGCCGTAGATTATAACGGTACACGTATCAACATTCTAGATACACCAGGACACGCGGACTT
CGGTGGTGAAGTAGAACGTATCATGAAAATGGTAGACGGTGTTGTTTTAGTTGTCGATGCGTATGAAGGAACAAT
GCCTCAAACACGTTTCGTATTGAAAAAAGCATTAGAACAAAAAGTAACACCAATCGTGGTTGTTAACAAAATTGA
CAAACCTTCTGCTCGTCCTGAACACGTAGTAGATGAAGTTTTAGAGTTATTCATCGAATTAGGTGCAGACGACGA
TCAATTAGATTTCCCAGTTGTTTATGCTTCTGCTTTAAACGGAACTTCAAGTGAATCAGATGATCCAGCAGATCA
AGAGCCAACAATGGCCCCAATTTTTGATAAAATTATTGAACATGTGCCAGCTCCAGTTGACAATTCAGACGAACC
ACTTCAATTCCAAGTCTCATTACTAGACTACAACGATTACGTTGGACGTATTGGGATTGGCCGTGTGTTCCGTGG
CACAATGAAAGTCGGCGACCAAGTTGCGTTGATGAAATTAGATGGCAGCGTGAAAAATTTCCGTGTAACGAAAAT
TTTAGGTTTCTTTGGCTTACAACGTGTGGAAATTGATGAAGCAAAAGCGGGCGATTTAATTGCCGTTTCTGGAAT
GGAAGACATTTTCGTTGGGGAAACAGTTGTAGATGTTCACAATCAAGAAGCATTACCAATTCTACACATTGATGA
GCCAACCTTACAAATGACTTTCTTAGTTAACAATTCTCCATTTGCGGGACGTGAAGGAAAATACATCACCGCTCG
TAAAATCGAAGAACGTTTAATGGCTGAGTTACAAACAGACGTATCTTTACGTGTTGATCCAATTGGCCCAGATTC
TTGGACTGTATCAGGTCGTGGCGAATTGCATTTATCAATTTTAATTGAAAACATGCGTCGTGAAGGCTATGAATT
ACAAGTTTCTCGTCCAGAAGTTATTGAACGTGAAATTGATGGAGTTAAATGTGAACCATTTGAACGTGTTCAAAT
TGACACACCTGAAGA

193. Lactococcus lactis (SEQ ID NO. 193)

CGAAAAAGCAAGTTAAATATGTTGTAAATAATGGTGTTACATTAGATAATACTAGTGGTGGGCCTAATTTGGCTG
CACCTGTGACGGTGGATAGTCAGGTAATTTCGAACGATAAAGGTACGATTATGGGTGTAAGGACCTATACAGCAG
ATTTAAGCCAAGCAGAAGTAGTTAAAAAAGTGGGTAATTTGAATGCAATGTCCTTTGGAGAATTTTGGGGTACAA
AAGTTTTTGCTGCCAGCCAAAATCAGACAAATTCAGATAAGACTTATTCTGTTACGTTTAAACTGAATATAAATT
GGATAGTATCTAATGGCTATGCTTCGCTAACAAAAGTAACAGGTGGCTATGGTTCTTGCATTGACCATGTTTATG
TTGCTAATTCTAGTGTTACTACTGCAACGAATGGTCAGATTAAAGGTTCAAGTGGTTATACTCAACAAGTTGATG
ACAAATCAGAAGGGAATAGTTTATCGTGGTCAATTACGCGAAACTATAAACCTGTAAAAGTTCCAGCAAGTGGGG
CAAATGTAGGAGCTACGTATTTTGCCACACTTAAACGGGGAAATAGTACATGGAAATTCCAAACAACAAATAGAG
CTTATTAAGTGGGAGGAAGTGGAATGAATATAAAAGGCATAAAAATTTGGCAAGTATTTCTTGCATTCATCATTT
GGATAGGAACCATGTTTCTTCCTGCAACGGTAAATCAGGCTAAATTGAATACGAATTTTGACTATAAAAAAAGTC
GAGAAAATTTCTTTTATTTTCTTTTTCATCAAGTCCCTTTTTATAGTTTCATTTTGGGATTGGTGTTGCTTATAT
CACTTTTTCTCATTTATAGGAAAATAAATTTTAGTGTCTATTTTTCTTTTGCTAGTCTTATTTTTTACATTAGTT
TCTTAGTTATAGCTTTTCCGTCTATGATTATTTTTAATCATAGTTTATCTGGGAATACTTTTGGGGCTGAACTTT
CTATCTTTCTAACCTTTTATGGAGCTGGATATATTATTGCTGTTCTATTTGGTTTAGTTGCTTTTCTTTTACTCT
TTCTCTACAGTTTAAGAATAAAAGAATGTTAACAACATAATCATTTTTACTGATTTTATTAATTATAAAAAAATA
AAGAACTCCTTAGAAATTTTTCTTTGGGGTTTTCATTTTGGAAGTAAAAAAATCTTTGTTAGGCTTGTAAACGTG
TGCATTTACAGCTTTTAGAAAAGTGTGCTATAATGGGTTAGATATATACGAAAGTAAGGTATGATAAAATTGACT
AAATTACGCGAAGATATTAGAAACGTCGCTGTTATTGCCCACGTTGACCATGGTAAAACTACATTGGTTGACGAA
CTCTTAAAACAATCTCAAACGTTGGATGCTCGTAAAGAATTAGCTGAACGTGCGATGGACTCAAATGCACTTGAG
CAAGAACGTGGGATTACTATCCTTGCCAAAAATACAGCAGTTGAATATAACGGAACTCGTATCAACATCTTGGAC
ACACCAGGTCACGCGGACTTCGGTGGAGAAGTTGAACGTATTATGAAAATGGTTGATGGGGTTGTCCTCGTTGTC
GATGCTTATGAAGGAACAATGCCTCAAACACGTTTTGTTTTGAAA

Figure 8. Amplification of molecular marker V (carB) in Gram-negative bacteria



1. DNA Ladder (123 bp)
2. Pseudomonas aeruginosa
3. Pseudomonas pseudoalacaligenes
4. Stenotrophomonas maltophilia
5. Citrobacter freundii
6. Serratia liquefasciens
7. Providencia stuartii
8. Klebsiella pneumoniae
9. Klebsiella oxytoca
10. Pseudomonas syringae
11. Pseudomonas putida
12. Enterobacter aerogenes
13. Pseudomonas diminuta
14. Proteus mirabilis
15. Burkholderia cepacia
16. Burkholderia picketti
17. Proteus vulgaris
18. Serratia marcescens
19. Negative control

Figure 9. Molecular marker V (carB) sequences amplified from different Gram-negative bacteria (SEQ ID NOs 194-232, 238-239, 242-254) and from various Gram-positive bacteria (SEQ ID NOs 233-237, 240-241, 255)

194. Neisseria meningitidis groupe B (SEQ ID NO. 194) *NMENB*

TTTNNGGCGGNTGTTACCTACATCGAGCCGATTATGTGGCAGACGGTGGAGAAGATTATCGCCAAAGAGCGGCCC
GATGCGATTCTGCCCACGATGGGCGGCCAGACCGCGCTGAACTGTGCGCTGGATTTGGCGCGCAACGGCGTGCTG
GCGAAATACAACGTCGAGTTAATCGGCGCGACAGAAGACGCGATTGACAAGGCGGAAGACCGTGGCCGCTTTAAA
GAAGCGATGGAAAAAATCGGTTTGTCTTGCCCGAAATCTTTTGTCTGCCACACGATGAACGAAGCCTTGGCGGCG
CAAGAACAGGTCGGCTTCCCGACGCTGATTCGTCCGTCTTTCACGATGGGCGGTTCGGGCGGCGGCATTGCCTAC
AATAAAGACGAGTTTTTGGCGATTTGCGAACGCGGTTTCGATGCGTCGCCCACGCACGAGCTGCTGATTGAGCAG
TCCGTCCTCGGCTGGAAA

195. Neisseria meningitidis groupe C (SEQ ID NO. 195) *NMENC*

GTTACCTACATCGAGCCAATTATGTGGCAGACGGTGGAGAAGATTATCGCCAAGGAGCGTCCTGATGCGATTCTG
CCCACGATGGGCGGTCAGACCGCGCTGAACTGTGCGCTGGATTTGGCGCGCAACGGCGTGCTGGCGAAATACAAT
GTCGAGCTGATCGGCGCGACGGAAGACGCGATTGACAAGGCGGAAGACCGCGGTCGTTTTAAAGAAGCGATGGAA
AAAATCGGCCTCTCCTGCCCGAAATCTTTTGTCTGCCACACGATGAACGAAGCTTTGGCAGCGCAAGAACAGGTC
GGCTTCCCTACCCTGATTCGTCCGTCTTTCACGATGGGCGGTTCGGGCGGCGGCATTGCCTACAATAAAGATGAG
TTTTTGGCGATTTGCGAACGCGGTTTCGATGCGTCGCCTACGCACGAGCTGCTGATTGAGCAGTCTGTTCCTCGG
CTGGAAAGA

196. Enterobacter cloaceae (SEQ ID NO. 196) *ECLO*

GCAACCTACATCGAGCCAATTCACTGGGAAGTGGTACGTAAAATCATCGAGAAAGAGCGTCCGGATGCGGTTCTG
CCGACCATGGGTGGCCAGACTGCGCTGAACTGTGCGCTGGAGCTGGAGCGTCAGGGCGTGCTGGAAGAGTTCGGC
GTGACCATGATTGGTGCGACCGCCGACGCGATTGATAAAGCAGAAGACCGTCGTCGCTTCGACGTGGCGATGAAA
AAAATCGGCCTCGACACCGCGCGTTCCGGTATCGCTCACAACATGGAAGAGGCGCTGGCCGTTGCGGCTGAAGTG
GGTTATCCGTGCATCATCCGTCCTTCCTTCACCATGGGCGGCACCGGCGGCGGTATCGCCTACAACCGCGAAGAG
TTTGAAGAGATTTGCGAGCGCGGCCTGGATCTCTCCCCAACCAAAGAGCTGCTGATTGATGAATCGCTGATTGGC
TGGAAAGA

197. Klebsiella pneumoniae (SEQ ID NO. 197) KPNE

CTACATCGAGCCGATTCACTGGGAAGTGGTGCGTAAAATCATCGAAAAAGAGCGCCCGGATGCGGTGCTGCCGAC
CATGGCGGCCAGACGGCGCTGAACTGCGCGCTCGAGCTGGAGCGTCAGGGGGTCCTGGCTGAATTCGGCGTGAC
CATGATTGGTGCCACCGCCGATGCGATTGATAAAGCCGAAGACCGTCGCCGTTTCGATATCGCAATGAAAAAAAT
CGGCCTCGACACCGCGCGCTCTGGTATCGCCCACACGATGGAAGAGGCGCTGGCGGTTGCCGCCGACGTTGGTTT
CCCGTGCATCATCCGTCCGTCCTTCACCATGGGCGGCACCGGCGGCGGTATCGCCTATAACCGCGAAGAGTTCGA

AGAAATCTGCGAACGCGGCCTGGATCTCTCTCCGACCAACGAACTGCTGATCGATGAATCGCTGATCGGCTGGAA
AGA

198. ***Shigella sonnei*** **(SEQ ID NO. 198)** **SSON**

GCGACCTACATCGAGCCGATTCACTGGGAAGTAGTACGCAAGATTATTGAAAAAGAGCGCCCGGACGCGGTGCTG
CCAACGATGGGCGGTCAGACGGCGCTGAACTGCGCGCTGGAGCTGGAGCGTCAGGGCGTGTTGGAAGAGTTCGGC
GTGACTATGATTGGTGCGACCGCCGATGCGATTGATAAAGCAGAAGACCGCCGTCGTTTCGACGTAGCGATGAAG
AAAATTGGTCTGGAAACCGCGCGTTCCGGTATCGCACACACGATGGAAGAAGCGCTGGCGGTTGCCGCTGACGTG
GGCTTCCCGTGCATTATTCGCCCATCCTTTACCATGGGCGGTAGCGGCGGCGGTATCGCTTATAACCGCGAAGAG
TTTGAAGAAATTTGCGCCCGCGGTCTGGATCTCTCCCCAACCAAAGAGCTGCTGATTGATGAGTCGCTGATCGGC
TGGAAAGA

199. ***Escherichia coli K12*** **(SEQ ID NO. 199)** **ECOK12**

GCAACCTACATCGAGCCGATTCACTGGGAAGTTGTACGCAAGATTATTGAAAAAGAGCGCCCGGACGCGGTGCTG
CCAACGATGGGCGGTCAGACGGCGCTGAACTGCGCGCTGGAGCTGGAACGTCAGGGCGTGTTGGAAGAGTTCGGT
GTCACCATGATTGGTGCCACTGCCGATGCGATTGATAAAGCAGAAGACCGCCGTCGTTTCGACGTAGCGATGAAG
AAAATTGGTCTGGAAACCGCGCGTTCCGGTATCGCACACACGATGGAAGAAGCGCTGGCGGTTGCCGCTGACGTG
GGCTTCCCGTGCATTATTCGCCCATCCTTTACCATGGGCGGTAGCGGCGGCGGTATCGCTTATAACCGTGAAGAG
TTTGAAGAAATTTGCGCCCGCGGTCTGGATCTCTCTCCGACCAAAGAGTTGCTGATTGATGAGTCGCTGATCGGC
TGGAAAGA

200. ***Pseudomonas aeruginosa*** **(SEQ ID NO. 200)** **PAER**

CTACATCGAGCCGATCAAGTGGGCCACCGTGGCCAAGATCATCGAGAAGGAACGCCCCGACGCGCTGCTGCCGAC
CATGGGCGGCCAGACCGCGCTGAACTGCGCCCTGGACCTGGAGCGCCACGGCGTGCTGGAGAAGTTCGGCGTGGA
GATGATCGGCGCCAATGCCGATACCATCGACAAGGCCGAGGACCGCTCGCGCTTCGACAAGGCGATGAAGGATAT
CGGCCTGGCCTGTCCGCGCTCGGGCATCGCCCACAGCATGGAGGAGGCCTACGGCGTGCTCGAGCAGGTCGGCTT
CCCCTGCATCATCCGTCCGTCCTTCACCATGGGCGGCACCGGCGGCGGTATCGCCTACAACCGTGAAGAGTTCGA
AGAGATCTGCGCCCGTGGCCTCGACCTGTCGCCGACCAACGAGCTGTTGATCGACGAGTCGCTGATCGGCTGGAA
AGA

201. ***Escherichia coli O157 :H7*** **(SEQ ID NO. 201)** **ECO157**

GCGACCTACATCGAGCCGATTCACTGGGAAGTGGTACGTAAGATTATTGAAAAAGAGCGCCCGGACGCGGTGCTG
CCAACCATGGGCGGTCAGACGGCGCTGAACTGCGCGCTGGAGCTGGAACGTCAGGGCGTGTTGGAAGAGTTCGGC
GTCACCATGATTGGTGCCACTGCCGATGCGATTGATAAAGCAGAAGACCGCCGTCGTTTCGACGTAGCGATGAAG
AAAATTGGTCTGGAAACCGCGCGTTCCGGTATCGCACATACGATGGAAGAAGCGCTGGCGGTTGCCGCTGACGTG
GGCTTCCCGTGCATTATTCGCCCATCCTTTACCATGGGCGGTAGCGGCGGCGGTATCGCTTATAACCGCGAAGAG
TTTGAAGAAATTTGCGCCCGCGGTCTGGATCTCTCTCCGACCAAAGAGTTGCTGATTGATGAGTCGCTGATCGGC
TGGAAAGA

202. ***Salmonella typhimurium*** **(SEQ ID NO. 202)** **STPMM**

CCTACATCGAGCCGATTCACTGGGAAGTGGTGCGCAAAATCATTGAAAAAGAGCGTCCGGATGCGGTGCTGCCGA
CCATGGGCGGCCAGACCGCGCTGAACTGCGCGCTGGAGCTGGAGCGGCAGGGCGTGCTGGAAGAGTTCGGCGTCA
CCATGATTGGTGCGACCGCCGACGCCATTGATAAAGCCGAAGACCGTCGTCGCTTCGATATCGCGATGAAGAAAA
TTGGTCTCGACACCGCGCGTTCCGGTATCGCGCACACTATGGAAGAAGCGCTGGCGGTTGCCGCTGACGTGGGCT
TCCCGTGCATCATCCGGCCTAGCTTTACCATGGGCGGCACCGGCGGCGGTATCGCTTACAACCGTGAAGAGTTCG
AAGAAATCTGCGAACGCGGTCTGGACCTCTCGCCAACCAACGAGCTGCTGATTGATGAATCGCTGATCGGCTGGA
AAGA

203. ***Salmonella enterica hadar*** **(SEQ ID NO. 203)** **SHAD**

TGATGCNCCTACATCGAGCCGATTCACTGGGAAGTGGTACGCAAAATCATCGAAAAAGAGCGTCCGGATGCGGTG
CTGCCGACCATGGGCGGCCAGACGGCGCTGAACTGCGCGCTGGAGCTGGAGCGGCAGGGCGTGCTGGAAGAGTTC
GGCGTCACCATGATTGGCGCCACCGCCGACGCCATTGATAAAGCCGAAGACCGTCGTCGCTTCGATATCGCGATG
AAGAAAATTGGTCTCGACACCGCGCGTTCCGGTATCGCGCACACTATGGAAGAAGCGCTGGCGGTTGCCGCTGAC
GTGGGCTTCCCGTGCATCATCCGTCCGTCCTTTACCATGGGCGGCACCGGCGGCGGTATCGCTTACAACCGTGAA
GAGTTCGAAGAAATCTGCGAACGCGGTCTGGACCTCTCGCCAACCAACGAGCTGCTGATTGATGAATCGCTGATC
GGCTGGAAAGA

204. ***Salmonella enteritidis*** **(SEQ ID NO. 204)** ***SENT***

GGCTGATGCCCCTACATCGAGCCGATTCACTGGGAAGTGGTACGCAAAATCATCGAAAAAGAGCGTCCGGATGCG
GTGCTGCCGACCATGGGCGGCCAGACGGCGCTGAACTGCGCGCTGGAGCTGGAGCGGCAGGGCGTGCTGGAAGAG
TTCGGCGTCACCATGATTGGCGCCACCGCCGACGCCATTGATAAAGCCGAAGACCGTCGTCGCTTCGATATCGCG
ATGAAGAAAATTGGTCTCGACACCGCGCGTTCCGGTATCGCGCACACTATGGAAGAAGCGCTGGCGGTTGCCGCT
GACGTGGGCTTCCCGTGCATCATCCGTCCGTCCTTTACCATGGGCGGCACCGGCGGCGGTATCGCTTACAACCGT
GAAGAGTTCGAAGAAATCTGCGAACGCGGTCTGGACCTCTCGCCAACCAACGAGCTGCTGATTGATGAATCGCTG
ATCGGCTGGAAAGA

205. ***Salmonella enterica Brandenburg*** **(SEQ ID NO. 205)** ***SBRA***

TACATCGAGCCGATTCACTGGGAAGTGGTGCGCAAAATCATTGAAAAAGAGCGTCCGGATGCGGTGCTGCCGACC
ATGGGCGGCCAGACGGCGCTGAACTGCGCGCTGGAGCTGGAGCGGCAGGGCGTGCTCGAAGAGTTCGGCGTCACC
ATGATTGGCGCCACCGCCGACGCCATTGATAAAGCCGAAGACCGTCGTCGCTTCGATATCGCGATGAAGAAAATT
GGTCTCGACACCGCGCGTTCCGGTATCGCGCACACTATGGAAGAAGCGCTGGCGGTTGCCGCTGATGTGGGCTTC
CCGTGCATCATCCGTCCGTCCTTTACCATGGGCGGCACCGGTGGCGGTATCGCTTACAACCGTGAAGAGTTCGAA
GAAATCTGCGAACGCGGTCTGGACCTCTCGCCAACCAACGAGCTGCTGATTGATGAATCGCTGATCGGCTGGAAA
GA

206. ***Salmonella enterica derby*** **(SEQ ID NO. 206)** ***SDER***

CTACATCGAGCCGATTCACTGGGAAGTGGTGCGCAAAATCATCGAAAAAGAGCGTCCGGATGCGGTGCTGCCGAC
CATGGGCGGCCAGACCGCGCTGAACTGCGCGCTGGAGCTGGAGCGGCAGGGCGTGCTCGAAGAGTTCGGCGTCAC
CATGATTGGCGCCACCGCCGACGCCATTGATAAAGCCGAAGACCGTCGTCGCTTCGATATCGCGATGAAGAAAAT

CGGTCTCGACACCGCGCGTTCCGGTATCGCGCACACTATGGAAGAAGCGCTGGCGGTTGCCGCTGACGTGGGCTT
CCCGTGCATCATCCGTCCGTCCTTTACCATGGGCGGCACCGGCGGCGGTATCGCTTACAACCGTGAAGAGTTCGA
AGAAATCTGCGAACGCGGTCTGGACCTCTCGCCAACCAACGAGCTGCTGATTGATGAATCGCTGATCGGCTGGAA
AGA

207. Salmonella enterica virschow (SEQ ID NO. 207) *SVIR*

CTACATCGAGCCGATTCACTGGGAAGTGGTGCGCAAAATCATTGAAAAAGAGCGTCCGGATGCAGTGCTGCCGAC
CATGGGCGGCCAGACGGCGCTGAACTGTGCGCTGGAGCTGGAGCGGCAGGGCGTGCTGGAAGAGTTCGGCGTCAC
CATGATTGGCGCCACCGCCGACGCCATTGATAAAGCCGAAGACCGTCGTCGCTTCGATATCGCGATGAAGAAAAT
TGGTCTCGACACCGCGCGTTCCGGTATCGCGCACACTATGGAAGAAGCGCTGGCGGTTGCCGCTGACGTGGGCTT
CCCGTGCATCATCCGTCCGTCCTTTACCATGGGCGGCACCGGCGGCGGTATCGCTTACAACCGTGAAGAGTTCGA
AGAAATCTGCGAACGCGGTCTGGACCTCTCGCCAACCAACGAGCTGCTGATTGATGAATCGCTGATCGGCTGGAA
AGA

208. Salmonella paratyphi B (SEQ ID NO. 208) *SPTB*

CTACATCGAGCCGATTCACTGGGAAGTGGTGCGCAAAATCATTGAAAAAGAGCGTCCGGATGCAGTGCTGCCGAC
CATGGGCGGCCAGACCGCGCTGAACTGCGCGCTGGAGCTGGAGCGGCAGGGCGTGCTCGAAGAGTTCGGCGTCAC
CATGATTGGCGCCACCGCCGACGCCATTGATAAAGCCGAAGACCGTCGTCGCTTCGATATCGCGATGAAGAAAAT
TGGTCTCGACACCGCGCGTTCCGGTATCGCGCACACTATGGAAGAAGCGCTGGCGGTTGCCGCTGACGTGGGCTT
CCCGTGCATCATCCGGCCTAGCTTTACCATGGGCGGCACCGGCGGCGGTATCGCTTACAACCGTGAAGAGTTCGA
AGAAATCTGCGAACGCGGTCTGGACCTCTCGCCAACCAACGAGCTGCTGATTGATGAATCGCTGATCGGCTGGAA
AGA

209. Proteus vulgaris (SEQ ID NO. 209) PVUL

CGACAGTCATGACCGACCCTGAAATGGCGGATGCCACCTACATCGAGCCTATTCATTGGCAAGTCGTCAGAAAAA
TTATTGAAAAAGAGCGCCCTGATGCGATTTTGCCAACAATGGGGGGGCAAACGGCATTAAATTGCGCATTAGAAT
TAGAACGTCAAGGTGTGTTAGCTGAATTCGGTGTGACCATGATTGGTGCTACGGCTGATGCTATCGATAAAGCAG
AAGATAGACAACGCTTTGATAAAGCAATGAAAAAAATCGGCTTAGGCACAGCTCGCTCAGGTATTGCTCATAATC
TAGAAGAAGCTTTTGCCGTCGCTGAAGATGTCGGATTCCCTTGCATCATTCGTCCTTCATTTACTATGGGCGGCA
CGGGGGGCGGTATCGCTTATAACCGTGAAGAATTTGAAGAAATTTGTACTCGTGGATTAGATTTATCACCGACTA
ACGAGTTATTGATTGATGAATCACTTATTGGTTGGAAAGAGTACGAGATGGAA

210. Enterobacter aerogenes (SEQ ID NO. 210) EAER

CGACACTCATGACCGACCCGGAAATGGCCGATGCGACCTATATCGAGCCGATTCACTGGGAAGTGGTGCGTAAAA
TTATCGAAAAAGAGCGTCCGGACGCGGTGCTGCCGACCATGGGCGGCCAGACCGCGCTGAACTGCGCGCTGGAGC
TGGAGCGTCAGGGCGTGCTGGCAGAGTTCGGCGTGACCATGATTGGTGCGACCGCCGATGCGATCGATAAAGCGG
AAGACCGCCGTCGCTTCGACGTGGCGATGAAGAAAATCGGTCTCGACACCGCGCGTTCCGGCATTGCGCACACCA
TGGAAGAAGCGCTGGCGGTGGCCGCTGAAGTTGGCTTCCCATGCATCATCCGTCCGTCCTTTACTATGGGCGGCA
CCGGCGGCGGTATCGCCTATAACCGCGAAGAGTTCGAAGAAATCTGCGAACGCGGCCTGGATCTCTCTCCGACCA
ACGAACTGCTGATTGATGAATCGCTGATCGGCTGGAAGGAATACGAAATGGAA

211. ***Burkholderia cepacia*** **(SEQ ID NO. 211)** **BCEP**

CGACAGTCATGACCGATCCGGACCGCGACATCACAGCGACAGTGATGCGTGAACGAACTAGGCTAGTGAAATTTA
TCCGGCGCCGGATACGCGACCCGGACGATGCCGAGGACATCCTGCAGGATGTGTTTCACGAGTTCGTACAAGCGT
ATCGACTTCCAGCGCCCATTGAACAGGTGAGCGCGTGGCTTTTCCGTGCCGCGCGCAACCGAATCGTCGACCGTT
TTCGCAAGAAGAAGGAGCAGCCGCTGGCCGACCTGTCGGAGGTCGACGATGACGCGAACAGCGAGTATCGCCTCG
ACCTCGCGCTACCGGCGCATGATGCCGGCCCCGAAGCACTCTACGCTCGCACGCTCGTGCTCAAGGCCTTGCAGG
ATGCGCTCGACGAGTTGCCGACGAATCAGCGTGACGTCTTTATCGCACACGAGCTGGAGGGTCAGTCATAAATGT
CGA

212. ***Burkholderia mallei*** **(SEQ ID NO. 212)**

GGCGTTGCGTGAGGAGGGCTACAAGGTCATCCTCGTCAACAGCAACCCGGCGACGATCATGACCGATCCGAACAC
GGCGGACGTCACGTACATCGAGCCGATCACGTGGGAAGTCGTCGAGCGCATCATCGCGAAGGAGCGCCCCGACGC
GATCCTGCCGACGATGGGCGGCCAGACCGCGCTGAACTGCGCGCTCGACCTGTTCCACCACGGCGTGCTCGAGAA
GTACGGCGTCGAGCTGATCGGCGCGTCGCCGGAGGCGATCGACAAGGCCGAAGACCGCCAGAAGTTCAAGGACGC
GATGACGAAGATCGGCCTCGGCTCGGCGAAGTCCGGCATCGCGCACTCGATGGAAGAGGCGCTGAAGGTGCACGC
GGACATCGCGGCGGCGACGGGCGGCAGCGGCTACCCGGTCGTGATCCGCCCGTCGTTCACGCTCGGCGGCTCGGG
CGGCGGCATCGCGTACAACCGCGAGGAGTTCGAGGAGATCTGCAAGCGCGGCCTCGATCTGTCGCCGACGCGCGA
GCTGCTGATCGAGGAATCGCTGCTCGGCTGGAAGGAGTACGAGATGGAGGTCGTGCGCGATCGCGCCGACAACTG
CATCATCGTCTGCTCG

213. ***Burkholderia pseudomallei*** **(SEQ ID NO. 213)**

GGCGTTGCGTGAGGAGGGCTACAAGGTCATCCTCGTCAACAGCAACCCGGCGACGATCATGACCGATCCGAACAC
GGCGGACGTCACGTACATCGAGCCGATCACGTGGGAAGTCGTCGAGCGCATCATCGCGAAGGAGCGCCCCGACGC
GATCCTGCCGACGATGGGCGGCCAAACCGCGCTGAACTGCGCGCTCGACCTGTTCCACCACGGCGTGCTCGAGAA
GTACGGCGTCGAGCTGATCGGCGCGTCGCCGGAGGCGATCGACAAGGCCGAAGACCGCCAGAAGTTCAAGGACGC
GATGACGAAGATCGGCCTCGGCTCGGCGAAGTCCGGCATCGCGCACTCGATGGAAGAGGCGCTGAAGGTGCACGC
GGACATCGCGGCGGCGACGGGCGGCAGCGGCTACCCGGTCGTGATCCGCCCGTCGTTCACGCTCGGCGGCTCGGG
CGGCGGCATCGCGTACAACCGCGAGGAGTTCGAGGAGATCTGCAAGCGCGGCCTCGATCTGTCGCCGACGCGCGA
GCTGCTGATCGAGGAATCGCTGCTCGGCTGGAAGGAGTACGAGATGGAGGTCGTGCGCGATCGCGCCGACAACTG
CATCATCGTCTGCTCG

214. ***Legionella pneumophila*** **(SEQ ID NO. 214)**

CGACACTTATGACTGATCCTGAGCTTGCTGATGCCACCTATATAGAGCCTGTTCAATGGAAAGAAGTGGCTCGTA
TTATCGAAATAGAGAGGCCAGATGCTCTTTTACCGACGATGGGAGGACAAACAGCCTTAAACTGCGCCTTGGACT
TGGTAAGAGAAGGGGTATTAGCCAAGTACTCTGTTGAAATGATAGGAGCGACGCGTGAAGCCATAGACAGGGCGG
AAGATAGAGAAAAATTTCGCCAGCTGATGATTAAAATCGGATTGGATATGCCAAGGTCGACGATTGCTCATAGCC
TGGAAGAAGCAATTCAAGTACAAGCCCGTTTAGGCTTTCCTGCCATCATCAGGCCTTCATTTACCATGGGTGGTA
GTGGAGGCGGTATTGCCTATAATCGTGAAGAATTTGAAGAAATTTGCATTAGAGGATTGGAGTTGTCGCCAACTC
ACGAGCTTTTGATTGATGAATCGGTTCTGGGTTGGAAAGAATATGAAATGGA

215. Citrobacter freundii (SEQ ID NO. 215)

CGACACTTATGACTGATCCGGAAATGGCCGATGCCACCTACATCGAGCCGATTCACTGGGAAGTGGTACGCAAAA
TCATTGAGAAAGAGCGCCCGGATGCGGTGCTGCCAACCATGGGCGGTCAGACGGCGCTGAACTGTGCGCTGGAGC
TGGAACGCCAGGGCGTACTGGCTGAATTCGGCGTGACCATGATTGGCGCAACGGCGGATGCCATTGATAAAGCGG
AAGACCGTCGTCGCTTTGATATCGCGATGAAGAAAATTGGTCTCGACACCGCGCGCTCTGGCATCGCTCACACCA
TGGAAGAAGCGCTGGCGGTTGCTGCTGACGTGGGCTTCCCGTGCATCATCCGACCGAGCTTCACCATGGGCGGCA
CCGGCGGCGGTATCGCTTATAACCGTGAAGAGTTCGAAGAGATTTGTGAACGCGGTCTGGACCTTTCCCCAACCA
ACGAGCTGCTGATTGATGAATCGCTGATTGGCTGGAAAGAGTACGAAATGGA

216. Acinetobacter baumanii (SEQ ID NO. 216) ABAU

TCCATTTCGTACTCTTTCCAGCCAATTAAAGATTCCTCGATCAATAATTGGTGAGTAGGAGAGAGGTCGAAACCA
CGTTCACAAATCTCTAGGAATTCTTCGCGGTTATATGCAATACCACCGCCTGAACCACCCATAGTGAATGACGGA
CGGATAATTACTGGGAAACCAAAGCGAGATTGAATTTCCAATGCTTCTTCCATTGTTTCAGCAATGGCAGCTTTT
GGACATTCCAAGCCGATTTTGCGCATTGCTTCATCAAACAATTTACGGTCTTCAGCTTTTTCAATTGCTTCTTTT
GTTGCACCAATAAGTTCTACGCCGTATTTTTCTAATACACCATTTTCATCAAGTGCAAGTGCGCAGTTAAGAGCA
GTTTGTCCACCCATAGTAGGGAGTACTGCATCTGGGCGCTCTTTTTCAATGATTTGAGCAACAGTTTGCCAAGTA
ATTGGCTCAATATAAGTTGCATCAGCCATTGAAGGGTCAGTCATAAGTGTCGA

217. Serratia marcescens (SEQ ID NO. 217) SMAR

CGACAGTTATGACCGACCCGGAGATGGCCGACGCGACCTATATTGAGCCGATCCACTGGGAAGTGGTGCGCAAGA
TCATCGAAAAAGAGCGCCCGGATGCGGTGCTGCCGACCATGGGCGGCCAGACGGCGCTGAACTGCGCGCTGGAGC
TGGAGCGCCAGGGCGTGCTGGCCGAGTTCGGCGTTACCATGATCGGCGCCACCGCCGATGCGATTGACAAGGCCG
AAGACCGTCGCCGCTTCGATGTGGCGATGAAGAAAATCGGTCTGGATACCGCGCGTTCCGGCATCGCGCACACCA
TGGAAGAAGCGCTGGCGGTAGCCGCTGACGTCGGCTTCCCGTGCATCATCCGCCCTTCCTTTACCATGGGCGGCA
CCGGCGGCGGCATCGCCTACAACCGCGAAGAGTTCGAAGAGATCTGCGAACGCGGTCTGGACCTGTCGCCGACCA
ACGAGCTGCTGATCGATGAATCGCTGATCGGTTGGAAAGAATACGAGATGGAA

218. Pseudomonas putida (SEQ ID NO. 218) PPUT

CGACACTCATGACCGACCCCGGATTTGAGTGACCACCATGCCAAAACGTACAGACATCAAAAGCATCCTGATTCT
CGGTGCCGGCCCGATCGTGATCGGCCAGGCCTGTGAATTCGACTACTCCGGCGCCCAGGCCTGCAAGGCCCTGCG
CGAGGAAGGTTTCCGCGTCATCCTGGTGAACTCCAACCCAGCCACCATCATGACCGACCCGGCCATGGCCGACGC
CACCTACATCGAGCCGATCAAGTGGCAGTCGGTGGCCAAGATCATCGAGAAAGAGCGCCCGGACGCCGTTTTGCC
GACCATGGGTGGCCAGACCGCCCTGAACTGCGCCCTGGACCTGGAGCGCCACGGCGTTCTGGAGAAGTTTGGCGT
AGAGATGATCGGTGCCAACGCCGATACCATCGACAAGGCTGAAGACCGCTCGCGCTTCGACAAGGCCATGAAAGA
CATCGGCCTGGAATGCCCGCGCTCGGGTATCGCCCACAGCATGGAAGAGGCCAATGCGGTCCTCGAAAAGCTCGG
CTTCCCGTGCATCATTCGCCCGTCGTTCACCATGGGGTGGCACCGGCGGTGGTATCGCTTACAACCGTGAAGAAT
TCGAAGAAAT

219. Morganella morganii (SEQ ID NO. 219) MMOR

CGAAAAAGAGCGCCCGGATGCCGTTCTGCCGACCATGGGCGGACAAACCGCGCTGAACTGTGCGCTGGATCTGGA
ACGTCACGGCGTGCTGGCAGAGTTCGGCGTCGAAATGATTGGCGCGACAGCAGATGCGATTGATAAAGCCGAAGA
TCGCCGCCGTTTCGATATCGCGATGAAAAAAATCGGTCTGGATACAGCGCGTTCCGGTATCGCACACACCATGGA
AGAAGCGTTTGCGGTCGCCGATGATGTCGGTTTCCCGTGCATTATCCGCCCGTCATTCACCATGGGCGGCACCGG
CGGCGGTATTGCGTATAACCGTGAAGAATTCGAGGAAATCTGTACCCGCGGCCTGGATCTCTCCCTGACCAACGA
ACTGCTGATTGATGAATCACTGATTGGCTGGAAAGAGTACGAAATGGAAAGGGCGAATTCCAGCACACTGGCGGC
CGTTACTAGTGGATCA

220. Klebsiella oxytoca (SEQ ID NO. 220) KOXY

CGACAGTTATGACTGACCCGGAAATGGCCGATGCCACCTACATCGAGCCGATTCACTGGGAAGTGGTGCGCAAGA
TCATTGAGAAAGAGCGTCCGGATGCGGTTCTGCCGACCATGGGCGGCCAGACGGCGCTGAACTGCGCGCTGGAGC
TGGAGCGTCAGGGCGTGCTGGCCGAGTTCGGCGTGACCATGATTGGCGCGACCGCCGACGCGATTGATAAAGCCG
AAGACCGCCGCCGTTTCGACGTGGCGATGAAGAAAATCGGTCTCGATACCGCGCGTTCCGGTATCGCGCATACCA
TGGAAGAAGCGCTGGCGGTTGCCGCTGAAGTTGGCTTCCCGTGCATCATCCGTCCGTCCTTTACGATGGGCGGCA
CCGGCGGCGGTATCGCCTACAACCGCGAAGAGTTCGAAGAGATCTGCGAACGCGGTCTGGATCTCTCGCCGACCA
ACGAGCTGCTGATTGATGAATCGCTGATCGGCTGGAAAGAATACGAAATGGAA

221. Moraxella catarrhalis (SEQ ID NO. 221) MCAT

CCACATTATGACTGACCCGTCCATGGCTGATGCCACTTATATTGAACCGATTACCTGGCAGACGGTAGAGCAAAT
CATTGCCAAAGAGCGTCCTGATGCCATTTTGCCAACCATGGGTGGACAAACGGCACTTAACTGTGCGCTTGACCT
TGACAAACATGGCGTGCTTGCCAAATATGGCTGTGAGCTGATTGGGGCGACCAAAGAAGCCATTGAAAAAGCCGA
AGACCGTGAACTGTTTGATAAAGCCATGAAAAAAATCGGTCTGGAATGCCCCAAAGCAGAAATTGCACAGAGCAT
GGATGATGCTTTTGCCATTCAAGCTAAGGTTGGTTTTCCGTGCATTATCCGCCCATCATTCACCATGGGGGGTTC
TGGGGGTGGCATTGCTTATAACCGTGAGGAGTTTATTGAGATTTGTGAGCGTGGGTTTGACTTATCACCCACCCA
CCAGCTGCTCATTGATGAGAGTTTAATCGGNTGGAAAGAGTANGAAATGGAA

222. Brucella melitensis biovar 1 (SEQ ID NO. 222) BMEL1

TCTTCGATCAGAACTTCGGTCGTCGGCGAAGCGTCGAGGCCGCGTTCGATAATCTCGAAGAATTCCTGACGGTTA
TAGGCAATGCCGCCGCCGGTGCCGCCGAGCGTGAAGGAGGGGCGGATGATCGCGGGCAGGCCAACCACGTCGAGC
GCCTGTGCTGCCTTTGCAAGCGCATGGCTCATATAGCGCTGCTTGCGCTCCACTTCGCCGAGCTGCCATTCGGTT
TCAAGCTTGTCGAGCGCCTTGTCCAGTTCGTCGCCGGAGAATTGCGCCTTCACCTCCGCGCGCTTGACCTCGTGG
CGCTTGCGGTCCTCATCCTTGATTTCAGTCGCATTGGCGAACATCGAGCCCGGCGTGTCGAGGCCGATCTTCTTC
ATGGCTTCGCGGAAGAGCGCGCGGTCTTCGGCCTTGTCGATAGCTTCGGCCTTGGCGCCGATCATCTCGACGTTA
TAACGTTCAAGCACGCCCATGCGGCGCAAGGAAAGCGCGGTGTTGAGCGCGGTCTGTCCGCCCATCGTCGGCAGG
ATCGCGTCCGGGCGCTCCTTGGCGATGATCTTGGCGACGACTTCCGGCGTGATCGGCTCGATATAGGTTGCATCC
GCCAGATCGGGATCAGTATAAAAT

223. ***Brucella melitensis biovar 2*** **(SEQ ID NO. 223) BMEL2**

TTCTTCGATCAGAACTTCGGTCGTCGGCGAAGCGTCGAGGCCGCGTTCGATAATCTCGAAGAATTCCTGACGGTT
ATAGGCAATGCCGCCGCCGGTGCCGCCGAGCGTGAAGGAGGGGCGGATGATCGCGGGCAGGCCAACCACGTCGAG
CGCCTGTGCTGCCTTTGCAAGCGCATGGCTCATATAGCGCTGCTTGCGCTCCACTTCGCCGAGCTGCCATTCGGT
TTCAAGCTTGTCGAGCGCCTTGTCCAGTTCGTCGCCGGAGAATTGCGCCTTCACCTCCGCGCGCTTGACCTCGTG
GCGCTTGCGGTCCTCATCCTTGATTTCAGTCGCATTGGCGAACATCGAGCCCGGCGTGTCGAGGCCGATCTTCTT
CATGGCTTCGCGGAAGAGCGCGCGGTCTTCGGCCTTGTCGATAGCTTCGGCCTTGGCGCCGATCATCTCGACGTT
ATAACGTTCAAGCACGCCCATGCGGCGCAAGGAAAGCGCGGTGTTGAGCGCGGTCTGTCCGCCCATCGTCGGCAG
GATCGCGTCCGGGCGCTCCTTGGCGATGATCTTGGCGACGACTTCCGGCGTGATCGGCTCGATATAGGTTGCATC
CGCCAGATCGGGATCAGT

224. ***Brucella abortus biovar 1*** **(SEQ ID NO. 224) BABO1**

TCTTCGATCAGTAACTTCGGTCGTCGGCGAAGCGTCGAGGCCGCGTTCGATAATCTCGAAGAATTCCTGACGGTT
ATAGGCAATGCCGCCGCCGGTGCCGCCGAGCGTGAAGGAGGGGCGGATGATCGCGGGCAGGCCAACCACGTCGAG
CGCCTGTGCTGCCTTTGCAAGCGCATGGCTCATATAGCGCTGCTTGCGCTCCACTTCGCCGAGCTGCCATTCGGT
TTCAAGCTTGTCGAGCGCCTTGTCCAGTTCGTCGCCGGAGAATTGCGCCTTCACCTCCGCGCGCTTGACCTCTTG
GCGCTTGCGGTCCTCATCCTTGATTTCAGTCGCATTGGCGAACATCGAGCCCGGCGTGTCGAGGCCGATCTTCTT
CATGGCTTCGCGGAAGAGCGCGCGGTCTTCGGCCTTGTCGATAGCTTCGGCCTTGGCGCCGATCATCTCGACGTT
ATAACGTTCAAGCACGCCCATGCGGCGCAAGGAAAGCGCGGTGTTGAGCGCGGTCTGTCCGCCCATCGTCGGCAG
GATCGCGTCCGGGCGCTCCTTGGCGATGATCTTGGCGACGACTTCCGGCGTGATCGGCTCGATATAGGTTGCATC
CGCCAGATCGGGATCAG

225. ***Brucella abortus biovar 2*** **(SEQ ID NO. 225) BABO2**

CGCCTCTTCGATCAGTAACTTCGGTCGTCCGGCGAAGCGTCGAGGCCGCGTTCGATAATCTCGAAGAATTCCTGA
CGGTTATAGGCAATGCCGCCGCCGGTGCCGCCGAGCGTGAAGGAGGGGCGGATGATCGCGGGCAGGCCAACCACG
TCGAGCGCCTGTGCTGCCTTTGCAAGCGCATGGCTCATATAGCGCTGCTTGCGCTCCACTTCGCCGAGCTGCCAT
TCGGTTTCAAGCTTGTCGAGCGCCTTGTCCAGTTCGTCGCCGGAGAATTGCGCCTTCACCTCCGCGCGCTTGACC
TCTTGGCGCTTGCGGTCCTCATCCTTGATTTCAGTCGCATTGGCGAACATCGAGCCCGGCGTGTCGAGGCCGATC
TTCTTCATGGCTTCGCGGAAGAGCGCGCGGTCTTCGGCCTTGTCGATAGCTTCGGCCTTGGCGCCGATCATCTCG
ACGTTATAACGTTCAAGCACGCCCATGCGGCGCAAGGAAAGCGCGGTGTTGAGCGCGGTCTGTCCGCCCATCGTC
GGCAGGATCGCGTCCGGGCGCTCCTTGGCGATGATCTTGGCGACGACTTCCGGCGTGATCGGCTCGATATAGGTT
GCATCCGCCAGATCGGGATCAGTATAAATTAGT

226. ***Brucella suis biovar 1*** **(SEQ ID NO. 226) BSUI1**

TTAGANCGCCTCTTCGATCAGAACTTCGGTCGTCGGCGAAGCGTCGAGGCCGCGTTCGATAATCTCGAAGAATTC
CTGACGGTTATAGGCAATGCCGCCGCCGGTGCCGCCGAGCGTGAAGGAGGGGCGGATGATCGCGGGCAGGCCAAC
CACGTCGAGCGCCTGCGCTGCCTTTGCAAGCGCATGGCTCATATAGCGCTGCTTGCGCTCCACTTCGCCGAGCTG
CCATTCGGTTTCAAGCTTGTCGAGCGCCTTGTCCAGTTCGTCGCCGGAGAATTGCGCCTTCACCTCCGCGCGCTT
GGCCTCGTGGCGCTTGCGGTCCTCATCCTTGATTTCAGTCGCATTGGCGAGCATCGAGCCCGGCGTGTCGAGGCC
GATCTTCTTCATGGCTTCGCGGAAGAGCGCGCGGTCTTCGGCCTTGTCGATAGCTTCGGCCTTGGCGCCGATCAT

CTCGACGTTATAACGTTCAAGCACGCCCATGCGGCGCAAGGAAAGCGCGGTGTTGAGCGCGGTCTGTCCGCCCAT
CGTCGGCAGGATCGCGTCCGGGCGCTCCTTGGCGATGATCTTGGCGACGACTTCCGGCGTGATCGGCTCGATATA
GGTTGCATCCGCCAGATCGGGATCAGTATAAA

227. ***Brucella suis biovar 3*** **(SEQ ID NO. 227)** **BSUI3**

CCCGCATTCTTCGATCAGTAACTTCGGTCGTCGGCGAAGCGTCGAGGCCGCGTTCGATAATCTCGAAGAATTCCT
GACGGTTATAGGCAATGCCGCCGCCGGTGCCGCCGAGCGTGAAGGAGGGGCGGATGATCGCGGGCAGGCCAACCA
CGTCGAGCGCCTGCGCTGCCTTTGCAAGCGCATGGCTCATATAGCGCTGCTTGCGCTCCACTTCGCCGAGCTGCC
ATTCGGTTTCAAGCTTGTCGAGCGCCTTGTCCAGTTCGTCGCCGGAGAATTGCGCCTTCACCTCCGCGCGCTTGG
CCTCGTGGCGCTTGCGGTCCTCATCCTTGATTTCAGTCGCATTGGCGAGCATCGAGCCCGGCGTGTCGAGGCCGA
TCTTCTTCATGGCTTCGCGGAAGAGCGCGCGGTCTTCGGCCTTGTCGATAGCTTCGGCCTTGGCGCCGATCATCT
CGACGTTATAACGTTCAAGCACGCCCATGCGGCGCAAGGAAAGCGCGGTGTTGAGCGCGGTCTGTCCGCCCATCG
TCGGCAGGATCGCGTCCGGGCGCTCCTTGGCGATGATCTTGGCGACGACTTCCGGCGTGATCGGCTCGATATAGG
TTGCATCCGCCAGATCGGGATCAGTATAAATTAGT

228. ***Brucella canis*** **(SEQ ID NO. 228)** **BCAN**

TTCTTCGATAGAACTTCGGTCGTCGGCGAAGCGTCGAGGCCGCGTTCGATAATCTCGAAGAATTCCTGACGGTTA
TAGGCAATGCCGCCGCCGGTGCCGCCGAGCGTGAAGGAGGGGCGGATGATCGCGGGCAGGCCAACCACGTCGAGC
GCCTGCGCTGCCTTTGCAAGCGCATGGCTCATATAGCGCTGCTTGCGCTCCACTTCGCCGAGCTGCCATTCGGTT
TCAAGCTTGTCGAGCGCCTTGTCCAGTTCGTCGCCGGAGAATTGCGCCTTCACCTCCGCGCGCTTGGCCTCGTGG
CGCTTGCGGTCCTCATCCTTGATTTCAGTCGCATTGGCGAGCATCGAGCCCGGCGTGTCGAGGCCGATCTTCTTC
ATGGCTTCGCGGAAGAGCGCGCGGTCTTCGGCCTTGTCGATAGCTTCGGCCTTGGCGCCGATCATCTCGACGTTA
TAACGTTCAAGCACGCCCATGCGGCGCAAGGAAAGCGCGGTGTTGAGCGCGGTCTGTCCGCCCATCGTCGGCAGG
ATCGCGTCCGGGCGCTCCTTGGCGATGATCTTGGCGACGACTTCCGGCGTGATCGGCTCGATATAGGTTGCATCC
GCCAGATCGGGATCAGTATAAAAA

229. ***Brucella ovis 69/290*** **(SEQ ID NO. 229)** **BOVI**

ACCGCTTCTTCGATCAGTAACTTCGGTCGTCGGCGAAGCGTCGAGGCCGCGTTCGATAATCTCGAAGAATTCCTG
ACGGTTATAGGCAATGCCGCCGCCGGTGCCGCCGAGCGTGAAGGAGGGGCGGATGATCGCGGGCAGGCCAACCAC
GTCGAGCGCCTGCGCTGCCTTTGCAAGCGCATGGCTCATATAGCGCTGCTTGCGCTCCACTTCGCCGAGCTGCCA
TTCGGTTTCAAGCTTGTCGAGCGCCTTGTCCAGTTCGTCGCCGGAGAATTGCGCCTTCACCTCCGCGCGCTTGGC
CTCGTGGCGCTTGCGGTCCTCATCCTTGATTTCAGTCGCATTGGCGAGCATCGAGCCCGGCGTGTCGAGGCCGAT
CTTCTTCATGGCTTCGCGGAAGAGCGCGCGGTCTTCGGCCTTGTCGATAGCTTCGGCCTTGGCGCCGATCATCTC
GACGTTATAACGTTCAAGCACGCCCATGCGGCGCAAGGAAAGCGCGGTGTTGAGCGCGGTCTGTCCGCCCATCGT
CGGCAGGATCGCGTCCGGGCGCTCCTTGGCGATGATCTTGGCGACGACTTCCGGCGTGATCGGCTCGATATAGGT
TGCATCCGCCAGATCGGGATCAGTATAAAATT

230. ***Francisella tularensis strain 4/j7*** **(SEQ ID NO. 230)**

CCNACTATTATGACTGATCCANCAACCGCAGATAAAATCTTTATCGAGCCAATTACGGTTGAGAGTGTTGGTAAA
ATTATCGCTAGAGAAAGACCAGATGCAATCTTACCTACAGTAGGTGGACAAACTGCGCTTAACTGTGCTTTAGCA

TTAGACAAAGCTGGTATTTTAGAAAAATATAATGTCGAAATGCTTGGTGCAAAAGCTGACTCTATTGATAAGGCA
GAAAATAGAGAAAGATTTAACAAAGCCATGGCAAAAATTGGCTTAGAGGTTCCTAGAAATGTTGTAGTGCAATCG
ATGGAGCAAGCTTATAAAGCTCTAGAAGATATCGGACTACCGGCTATTATCAGACCATCATTTACACTTGGTGGT
AGCGGTGGTGGTATCGCTTATACAAAAGAAGAGTTTGAAAAAATTGTCAAAAATGGTCTAAGCCTATCACCAACA
AATGAAGTACTAATAGAGAGGCACCCTAANAT

231. ***Francisella tularensis strain sva/t7*** **(SEQ ID NO.231)**

ACGAANTAGACTGATCCAACAACCGCAGATAAAATCTTTATCGAGCCAATTACGGTTGAGAGTGTTGGTAAAATT
ATCGCTAGAGAAAGACCAGATGCAATCTTACCTACAGTAGGTGGACAAACTGCGCTTAACTGTGCTTTAGCATTA
GACAAAGCTGGTATTTTAGAAAAATATAATGTCGAAATGCTTGGTGCAAAAGCTGACTCTATTGATAAGGCAGAA
AATAGAGAAAAATTTAACAAAGCCATGGCAAAAATTGGCTTAGAGGTTCCTAGAAATGTTGTAGTGCAATCGATG
GAGCAAGCTTATAAAGCTCTAGAAGATATCGGACTACCGGCTATTATCAGACCATCATTTACACTTGGTGGTAGC
GGTGGTGGTATCGCTTATACAAAAGAAGAGTTTGAAAAAATTGTCAAAAATGGTCTAAGCCTATCACCAACAAAT
GAAGTACTAATAGATGAGNCANCCTNAANC

232. ***Acinetobacter calcoaceticus*** **(SEQ ID NO. 232)** ***ACAL***

CGACAGTTATGACTGATCCTTCAATGGCTGATGCAACTTATATTGAGCCGATTACTTGGCAAACAGTTGCACAGA
TTATTGAAAAAGAACGTCCAGATGCAGTATTGCCAACTATGGGTGGTCAAACTGCATTGAACTGTGCCCTCGCAC
TTGATGAGCACGGCGTTCTTGCTAAATATAATGTTGAATTAATTGGTGCAAGCAAAGAAGCGATTGAGAAAGCCG
AAGATCGTAAACTCTTCGATATCGCTATGCGCAAAATTGGCTTGGAATGTCCAAAAGCTGCCATTGCTGAAACAA
TGGAAGAAGCTTTAACAATCCAGTCGCGCTTTGGTTTTCCTGTAATTATTCGTCCATCATTTACAATGGGTGGTT
CGGGCGGTGGCATTGCATATAACCGCGAAGAATTCCTTGAAATTTGTGAACGTGGTTTTGACCTCTCTCCTACTC
ACCAGTTATTGATCGATGAATCTTTAATTGGCTGGAAAGAATACGAGATGGAA

233. ***Mycobacterium tuberculosis*** **(SEQ ID NO. 233)**

GGTGCTGCGCGCCGAGGGCTTGCAGGTCAGCCTGGTGAACTCTAATCCGGCCACCATCATGACCGACCCGGAGTT
CGCCGACCACACCTACGTAGAGCCCATCACCCCGGCGTTCGTGGAGCGGGTTATCGCCCAACAGGCCGAGCGGGG
CAACAAGATCGACGCCCTGCTGGCGACCCTGGGTGGGCAGACCGCGCTGAACACCGCGGTCGCGCTGTACGAGAG
CGGGGTGCTGGAAAAGTACGGCGTGGAACTCATCGGCGCCGATTTCGACGCCATCCAGCGCGGCGAGGACCGGCA
GCGGTTCAAGGACATCGTCGCCAAGGCCGGTGGCGAATCCGCCCGGAGCCGAGTGTGTTTCACCATGGCCGAAGT
GCGTGAGACGGTCGCCGAGCTCGGCCTGCCGGTGGTGGTGCGGCCGAGCTTCACCATGGGCGGGCTGGGTTCGGG
GATAGCGTACTCCACCGACGAGGTCGACCGGATGGCCGGCGCCGGGCTGGCGGCCTCGCCCAGCGCCAACGTGCT
CATCGAGGAATCGATTTACGGCTGGAAGGAATTCGAACTCGAGCTGATGCGCGACGGCCACGACAATGTGGTGGT
GGTGTGCTCGATCGAAA

234. ***Mycobacterium bovis subspecies bovis*** **(SEQ ID NO. 234)**

GGTGCTGCGCGCCGAGGGCTTGCAGGTCAGCCTGGTGAACTCTAATCCGGCCACCATCATGACCGACCCGGAGTT
CGCCGACCACACCTACGTAGAGCCCATCACCCCGGCGTTCGTGGAGCGGGTTATCGCCCAACAGGCCGAGCGGGG
CAACAAGATCGACGCCCTGCTGGCGACCCTGGGTGGGCAGACCGCGCTGAACACCGCGGTCGCGCTGTACGAGAG
CGGGGTGCTGGAAAAGTACGGCGTGGAACTCATCGGCGCCGATTTCGACGCCATCCAGCGCGGCGAGGACCGGCA

GCGGTTCAAGGACATCGTCGCCAAGGCCGGTGGCGAATCCGCCCGGAGCCGAGTGTGTTTCACCATGGCCGAAGT
GCGTGAGACGGTCGCCGAGCTCGGCCTGCCGGTGGTGGTGCGGCCGAGCTTCACCATGGGCGGGCTGGGTTCGGG
GATAGCGTACTCCACCGACGAGGTCGACCGGATGGCCGGCGCCGGGCTGGCGGCCTCGCCCAGCGCCAACGTGCT
CATCGAGGAATCGATTTACGGCTGGAAGGAATTCGAACTCGAGCTGATGCGCGACGGCCACGACAACGTGGTGGT
GGTGTGCTCGATCGAAA

235. ***Mycobacterium avium subspecies paratuberculosis***
(SEQ ID NO. 235)

GGTGCTCAAGGCCGAGGGCCTGCAGGTCAGCCTGGTCAACTCCAACCCGGCCACCATCATGACCGATCCGGAGTA
CGCCGACCACACCTACGTCGAGCCCATCACGCCGGCCTTCGTCGAACGGGTGATCGCGCAGCAGGCCGAGCGGGG
CAACAAGATCGACGCGCTGCTGGCCACCCTGGGCGGGCAGACCGCGCTGAACACCGCCGTCGCGCTGTACGAGAA
CGGGGCGCTGGACCGCTACGGGGTGGAACTGATCGGCGCCGACTTCGACGCCATCCAGCGCGGCGAGGACCGGCA
GCGGTTCAAGGACATCGTCGCCAAGGTCGGCGGTGAATCCGCCCGCAGCCGAGTGTGTTTCACCATGGACGAGGT
GCGCGAGACCGTCGCCGAACTGGGCCTGCCGGTGGTGGTGCGGCCCAGCTTCACCATGGGCGGCCTGGGCTCGGG
GATGGCGCGCTCCGTCGAGGAGGTCGACCGGATGGCCGGCGCCGGGCTGGCCGAAAGCCCCAGCGCCAACGTGCT
GATCGAGGAATCCATCTACGGCTGGAAGGAATTCGAACTCGAGCTGATGCGCGACGGCAACGACAACGTCGTCGT
GGTGTGCTCGATCGA

236. ***Mycobacterium leprae*** **(SEQ ID NO. 236)**

CAAGTGAGTCTGGTCAACTCTAACCCGGCCACCATCATGACCGATCCGGAGTTCGCCGACCACACCTATGTCGAG
CCGATTACGCCGGCCTTCGTGGAGCGGGTGATTGTTCAGCAGGCCGAGCGTGGCAACAGGATTGACGCTTTGCTA
GCCACCTTAGGTGGGCAGACCGCGCTCAACACAGCGGTAGCGCTGTACGAAAACGGAGTGTTGGAGCGCTATGGC
GTCGAGCTCATCGGTGCTGATTTCGAGGCTATCCAGCGTGGTGAGGACCGGCAGCGATTCAAAGATCTCGTCGCT
AAGGTTGGTGGTGAATCCGCTCGCAGTAAAGTGTGTTTCACCATGGATGAGGTGCGTGAAACAGTCGAGGATCTT
GGCCTTCCGGTGGTGGTGCGGCCAAGTTTCACGATGGGCGGATTGGGTTCGGGCATGGCTCACTCCGACGAGGAG
GTTGGCCGGATGGCCGGCGCCGGGCTGGTAGCTTCACCTAGTGCCAACGTGCTGATCGAGGAATCGGTCTATGGT
TGGAAGGAATTCGAACTCGAGCTAATGCGCGATGGACACGACAGCGTCGTGGTGGTGTGCTCGATCGAGAACGTT

237. ***Nocardia farcinica*** **(SEQ ID NO. 237)**

GGTGCTCAAGTCCGAGGGCCTGCGCGTGTCGCTGGTGAACTCGAACCCGGCCACGATCATGACCGATCCCGAGTT
CGCCGACGCCACCTACGTCGAGCCGATCACCCCCGAATTCGTCGAGAAGGTCATCGCCAAGGAGCGCCCCGACGC
GATCCTGGCGACCCTCGGCGGGCAGACCGCGCTCAACACCGCGGTCGCGCTGCACGAGCGCGGCGTGCTGGAGAA
GTACGGCGTCGAACTGATCGGCGCCGACTTCGACGCCATCCAGCGCGGTGAGGACCGGCAGAAGTTCAAGGACAT
CGTCGCCAAGGTCGGCGGTGAGAGCGCCCGCTCGCGGGTCTGCTTCACCATGGACGAGGTCCGCGAGACCGTCGC
CGAACTGGGCTTCCCGGTCGTCGTGCGGCCCTCGTTCACCATGGGCGGGCTCGGCTCGGGCATGGCCTACAACGA
CGAGGACCTGGACCGGATCGCCGGTGGCGGCCTGGCCGCCTCGCCGACCGCCAACGTCCTGATCGAGGAGTCCAT
CCTCGGCTGGAAGGAATACGAGCTCGAGCTCATGCGCGACGGCCGCGACAACGTCGTGGTGGTCTGCTCCATCGA
GAACGTCGACCCGATGGG

238. Streptomyces coelicolor (SEQ ID NO. 238)

CCGGCGACGATCATGACCGACCCGGAGATCGCCGACGCCACCTACGTCGAGCCGATCACCCCCGAGTTCGTCGAG
AAGATCATCGCCAAGGAGCGCCCCGACGCCCTCCTGCCCACGCTCGGCGGCCAGACGGCCCTGAACACCGCGATC
TCCCTGCACGGCAACGGCGTCCTGGAGAAGTACGGCGTCGAACTGATCGGCGCCAATGTGGAGGCCATCAACAAG
GGCGAGGACCGCGACCTGTTCAAGGAGGTCGTCGAGGAGGTCCGCAAGAAGATCGGCCACGGCGAGTCCGCCCGG
TCCTACATCTGCCACTCCATGGACGACGTCCTCAAGGGCGTCGACGCGCTCGGCGGCTACCCCGTCGTCGTCCGC
CCCTCCTTCACCATGGGCGGCGCCGGCTCCGGCTTCGCCCACGACGAGGACGAACTGCGCCGGATCGCCGGACAG
GGCCTCACCCTCTCGCCGACCACCGAGGTGCTCCTGGAGGAGTCCATCCTCGGCTGGAAGGAGTACGAGCTGGAG

239. Streptomyces avermitilis (SEQ ID NO. 239)

ATCCTGCGCGCCGAGGGCCTCAGGGTCATCCTGGTCAACTCCAACCCGGCGACGATCATGACCGACCCGGAGATC
GCCGACGCCACCTACGTCGAGCCGATCACCCCGGAGTTCGTCGAGAAGATCATCGCCAAGGAGCGGCCGGACGCG
CTGCTGCCCACCCTCGGTGGTCAGACGGCCCTGAACACCGCCATCTCCATGCACGAGCAGGGTGTGCTGGAGAAG
TACGGTGTCGAGCTGATCGGCGCCAACGTCGAGGCGATCAACAAGGGCGAGGACCGCGACCTGTTCAAGGGCGTC
GTCGAGGCCGTCCGCGCGAAGATCGGGCACGGCGAATCCGCCCGCTCGGTCATCTGCCACTCCATGGACGACGTG
CTCGAGGGCGTCGAGACCCTCGGCGGTTACCCCGTCGTCGTCCGTCCCTCCTTCACCATGGGCGGCGCCGGCTCC
GGCTTCGCGCACGACGAGGAGGAGCTGCGCCGCATCGCGGGTCAGGGCCTGACGCTCTCCCCGACCACCGAGGTG
CTCCTGGAGGAGTCCATCCTCGGCTGGAAGGAGTACGAGCTGGAGCTGATGCGCGACAAGAACGACAACGTCGTG
GTCGTCTGCTCCATCGAG

240. Corynebacterium efficiens (SEQ ID NO. 240)

TGCTCAAGGAGGAGGGCCTGCGCGTCACCCTCATCAACTCCAACCCGGCCACCATCATGACCGACCCCGAGATGG
CGGACCACACCTACGTCGAGCCGATCGAGCCCGAGTACATCGAGAAGATCTTCCAGAAGGAGATCGAACAGGGCC
ACCCGATCGACACCGTCCTGGCAACCCTCGGCGGACAAACCGCCCTTAACGCTGCCATCCAGCTGGACCGCCTCG
GCATCCTGGAGAAGTACAACGTCGAGCTCATCGGTGCCGACATCGACGCCATCGAGCGTGGTGAGGACCGCCAGA
AATTCAAGGACATCGTCGCCACCATCGGTGGTGAATCAGCACGCTCCGCCGTCTGCCACAACATGGATGAGGTCT
ACGCCACCGTCGAGGAGCTCGGTCTCCCGGTCGTCGTGCGCCCCTCCTTCACCATGGGTGGTCTGGGTTCCGGTC
TGGCCTACACCATGGAGGACCTCGACCGCATCGCCGGCGGTGGCCTCGCCGCCTCCCCGGAGGCCAATGTCCTGA
TCGAGGAGTCCATCCTCGGCTGGAAGGAATACGAGCTGGAGCTCATGCGCGACGGCGATGACAATGTGGTGGTCA
TCTGCTCCATCGAGAACGTCGATGC

241. Corynebacterium glutamicum (SEQ ID NO. 241)

CTGAAGGAAGAGGGACTGCGCGTCACCCTCATCAACTCCAACCCAGCAACGATCATGACCGACCCAGAAATGGCT
GACCACACCTACGTGGAGCCAATCGAGCCGGAATACATCGACAAGATTTTCGCTAAGGAAATCGAGCAGGGCCAC
CCAATCGACGCCGTCCTGGCAACCCTTGGTGGCCAGACTGCACTTAACGCAGCTATCCAGCTGGATCGCCTCGGC
ATCCTGGAAAAGTACGGCGTTGAACTCATCGGTGCAGACATCGATGCCATTGAGCGCGGCGAAGATCGCCAGAAG
TTCAAGGATATTGTCACCACCATCGGTGGCGAATCCGCGCGTTCCCGCGTCTGCCACAACATGGAAGAAGTCCAC
GAGACTGTCGCAGAACTCGGCCTTCCAGTAGTCGTGCGTCCATCCTTCACTATGGGTGGCCTGGGCTCCGGTCTT
GCATACAACACCGAAGACCTTGAGCGCATCGCTGGTGGCGGACTTGCTGCATCTCCTGAAGCAAACGTCTTGATC

GAAGAATCCATCCTTGGTTGGAAGGAATTCGAGCTCGAGCTCATGCGCGATACCGCAGACAACGTTGTGGTTATC
TGCTCCATTGAAAACGTCGACGCACTGGGCGTGCAC

242. ***Bordetella parapertussis*** **(SEQ ID NO. 242)**

CCCGCCACCATCATGACCGACCCCGAAACGGCGGACGTCACCTATATCGAGCCCATCACGTGGCAAGCGGTCGAG
AAGATCATCGAGCGCGAGAAGCCCGATGCGCTGCTGCCCACCATGGGTGGCCAGACCGCGCTGAACTGCGCGCTC
GACCTGGCCCACCACGGCGTGCTGAAAAAGCACAACGTCGAGCTGATCGGCGCCAACGAGCACGCCATCGAGAAG
GCCGAAGACCGCCAGAAGTTCAAGCAGGCCATGACCGACATCGGCCTGGAATCGGCCAAGTCGGGCGTGGCCCAC
TCGATGGACGAGGCCTGGGAAGTGCAGCGCCGCATCGCGGCCGACATCGGCACGGCGGGCTTTCCCGTCGTCATC
CGCCCCAGCTTCACGCTGGGCGGCTCGGGCGGCGGCATCGCCTATAACGCCGAGGAATTCGAGGTCATCTGCCGC
CGCGGCCTGGAAGCCTCGCCGACCAAGGAGCTGCTGATCGAGGAGTCGCTGCTCGGCTGGAAAGAGTTCGAGATG

243. ***Bordetella bronchiseptica*** **(SEQ ID NO. 243)**

GCGCTCAAGGCCGAGGGTTACCGGACCATCCTGGTCAACAGCAACCCCGCCACCATCATGACCGACCCCGAAACG
GCGGACGTCACCTATATCGAGCCCATCACGTGGCAAGCGGTCGAGAAGATCATCGAGCGCGAGAAGCCCGATGCG
CTGCTGCCCACCATGGGCGGCCAGACCGCGCTGAACTGCGCGCTCGACCTGGCCCACCACGGCGTGCTGAAAAAG
CACAACGTCGAGCTGATCGGCGCCAACGAGCACGCCATCGAGAAGGCCGAAGACCGCCAGAAGTTCAAGCAGGCC
ATGACCGACATCGGCCTGGAATCGGCCAAGTCGGGCGTGGCCCACTCGATGGACGAGGCCTGGGAAGTGCAGCGC
CGCATCGCGGCCGACATCGGCACGGCGGGCTTTCCCGTCGTCATCCGCCCCAGCTTCACGCTGGGCGGCTCGGGC
GGCGGCATCGCCTATAACGCCGAGGAATTCGAGGTCATCTGCCGCCGCGGGCTGGAAGCCTCGCCGACCAAGGAG
CTGCTGATCGAGGAGTCGCTGCTCGGCTGGAAAGAGTTCGAGATGGAAGTGGTGCGCGACAAGGCGGACAACTGC
ATCATCGTCTGCTCGAT

244. ***Bordetella pertussis*** **(SEQ ID NO. 244)**

GCGCTCAAGGCCGAGGGTTACCGGACCATCCTGGTCAACAGCAACCCCGCCACCATCATGACCGACCCCGAAACG
GCGGACGTCACCTATATCGAGCCCATCACGTGGCAAGCGGTCGAGAAGATCATCGAGCGCGAGAAGCCCGATGCG
CTGCTGCCCACCATGGGTGGCCAGACCGCGCTGAACTGCGCGCTCGACCTGGCCCACCACGGCGTGCTGAAAAAG
CACAACGTCGAGCTGATCGGCGCCAACGAGCACGCCATCGAGAAGGCCGAAGACCGCCAGAAGTTCAAGCAGGCC
ATGACCGACATCGGCCTGGAATCGGCCAAGTCGGGCGTGGCCCACTCGATGGACGAGGCCTGGGAAGTGCAGCGC
CGCATCGCGGCCGACATCGGCACGGCGGGCTTTCCCGTCGTCATCCGCCCCAGCTTCACGCTGGGCGGCTCGGGC
GGCGGCATCGCCTATAACGCCGAGGAATTCGAAGTCATCTGCCGCCGCGGGCTGGAAGCCTCGCCGACCAAGGAG
CTGCTGATCGAGGAGTCGCTGCTCGGCTGGAAAGAGTTCGAGATGGAAGTGGTGCGCGACAAGGCGGACAACTGC
ATCATCGTCTGCTCGAT

245. ***Burkholderia mallei*** **(SEQ ID NO. 245)**

GGCGTTGCGTGAGGAGGGCTACAAGGTCATCCTCGTCAACAGCAACCCGGCGACGATCATGACCGATCCGAACAC
GGCGGACGTCACGTACATCGAGCCGATCACGTGGGAAGTCGTCGAGCGCATCATCGCGAAGGAGCGCCCCGACGC
GATCCTGCCGACGATGGGCGGCCAGACCGCGCTGAACTGCGCGCTCGACCTGTTCCACCACGGCGTGCTCGAGAA
GTACGGCGTCGAGCTGATCGGCGCGTCGCCGGAGGCGATCGACAAGGCCGAAGACCGCCAGAAGTTCAAGGACGC
GATGACGAAGATCGGCCTCGGCTCGGCGAAGTCCGGCATCGCGCACTCGATGGAAGAGGCGCTGAAGGTGCACGC

GGACATCGCGGCGGCGACGGGCGGCAGCGGCTACCCGGTCGTGATCCGCCCGTCGTTCACGCTCGGCGGCTCGGG
CGGCGGCATCGCGTACAACCGCGAGGAGTTCGAGGAGATCTGCAAGCGCGGCCTCGATCTGTCGCCGACGCGCGA
GCTGCTGATCGAGGAATCGCTGCTCGGCTGGAAGGAGTACGAGATGGAGGTCGTGCGCGATCGCGCCGACAACTG
CATCATCGTCTGCTCG

246. ***Burkholderia pseudomallei*** **(SEQ ID NO. 246)**

GGCGTTGCGTGAGGAGGGCTACAAGGTCATCCTCGTCAACAGCAACCCGGCGACGATCATGACCGATCCGAACAC
GGCGGACGTCACGTACATCGAGCCGATCACGTGGGAAGTCGTCGAGCGCATCATCGCGAAGGAGCGCCCCGACGC
GATCCTGCCGACGATGGGCGGCCAAACCGCGCTGAACTGCGCGCTCGACCTGTTCCACCACGGCGTGCTCGAGAA
GTACGGCGTCGAGCTGATCGGCGCGTCGCCGGAGGCGATCGACAAGGCCGAAGACCGCCAGAAGTTCAAGGACGC
GATGACGAAGATCGGCCTCGGCTCGGCGAAGTCCGGCATCGCGCACTCGATGGAAGAGGCGCTGAAGGTGCACGC
GGACATCGCGGCGGCGACGGGCGGCAGCGGCTACCCGGTCGTGATCCGCCCGTCGTTCACGCTCGGCGGCTCGGG
CGGCGGCATCGCGTACAACCGCGAGGAGTTCGAGGAGATCTGCAAGCGCGGCCTCGATCTGTCGCCGACGCGCGA
GCTGCTGATCGAGGAATCGCTGCTCGGCTGGAAGGAGTACGAGATGGAGGTCGTGCGCGATCGCGCCGACAACTG
CATCATCGTCTGCTCG

247. ***Pseudomonas putida*** **(SEQ ID NO. 247)**

GCCTGTAAAGCCCTGCGCGAGGAAGGTTTCCGCGTCATCCTGGTGAACTCCAACCCAGCCACCATCATGACCGAC
CCGGCCATGGCTGACGCCACCTACATCGAGCCGATCAAGTGGCAATCGGTGGCCAAGATCATCGAGAAAGAGCGC
CCGGACGCCGTCCTGCCGACCATGGGTGGCCAGACCGCCCTGAACTGCGCCCTGGACCTGGAGCGCCACGGCGTT
CTGGAGAAGTTCGGCGTGGAGATGATCGGTGCCAACGCTGACACCATCGACAAGGCCGAAGACCGTTCGCGCTTC
GACAAGGCCATGAAGGACATCGGCCTGGAGTGCCCGCGCTCCGGTATCGCCCACAGCATGGAAGAGGCCAATGCG
GTCCTCGAGAAGCTCGGCTTCCCGTGCATCATTCGCCCGTCGTTCACCATGGGCGGCACCGGCGGCGGTATCGCT
TACAACCGTGAAGAGTTCGAAGAAATCTGCACCCGTGGTCTGGACCTGTCGCCGACCAAAGAGCTGCTGATCGAC
GAATCGCTGATCGGCTGGAAGGAATACGAGATGGAGGTGGTCCGCGACAAGAAGGACAACTGCATCATCGTCTGC
TCGATCGAGAACTTCGACCCGATGG

248. ***Yersinia pseudotuberculosis*** **(SEQ ID NO. 248)**

ATGCCAAAACGTACAGATATAAAAAGCATCCTGATTCTGGGCGCAGGCCCGATTGTTATCGGCCAGGCTTGTGAG
TTTGACTACTCCGGTGCCCAAGCGTGTAAAGCACTGCGCGAAGAGGGTTACCGTGTCATTTTGGTGAACTCCAAT
CCGGCGACTATCATGACTGACCCGGAAATGGCCGATGCAACTTATATCGAGCCAATTCATTGGGAAGTGGTGCGT
AAGATTATCGAAAAAGAGCGTCCAGATGCTGTTTTGCCTACGATGGGTGGCCAAACTGCACTGAACTGTGCATTG
GAACTGGAGCGTCAGGGTGTTCTGGCAGAATTTGGCGTCACCATGATTGGTGCGACCGCCGATGCCATCGATAAA
GCCGAAGACCGCCGTCGCTTTGATATCGCGATGAAGAAGATTGGTCTGGATACGGCCCGCTCAGGTATTGCGCAT
AACATGGAAGAAGCACTGGCTGTTGCCGCTGATGTGGGCTTCCCGTGCATTATCCGCCCATCCTTTACGATGGGG
GGCACTGGTGGCGGTATCGCTTATAACCGTGAAGAGTTCGAAGAGATCTGCGAGCGCGGTCTGGATTTGTCACCA
ACCAAAGAGTTGTTGATTGACGAATCGCTGATTGGCTGGAAAGAGTACGAGATGGAAGTTGTCCGTGATAAAAAC
GACAACTGCATCATCGTTTGCTCCATTGAAAACTTCGATGCGATGGGGATTCACACCGGCGACTCTATCACTGTC
GCACCGGCTCAGACCCTGACCGATAAAGAATACCAAATCATGCGTAATGCCTCGATGGCGGTACTGCGTGAAATC
GGGGTAGAAACCGGGGGCTCTAACGTACAGTTCTCCGTCAACCCAAAAAATGGTCGTTTGATTGTCATTGAGATG

AACCCGCGTGTTTCTCGCTCTTCAGCACTGGCCTCTAAAGCAACCGGTTTCCCGATTGCCAAGATTGCCGCCAAA
CTGGCGGTCGGTTACACACTGGATGAGTTGATGAATGACATCACCGGTGGCCGTACTCCTGCGTCCTTTGAGCCT
TCTATCGACTATGTTGTTACCAAGATCCCACGCTTTAACTTTGAAAAATTTGCGGGTGCCAACGACCGTTTGACC
ACGCAAATGAAGTCTGTGGGTGAAGTCATGGCCATTGGCCGCACGCAGCAAGAATCACTGCAAAAAGCACTGCGC
GGGCTGGAAGTGGGCGCGACCGGTTTTGACCCGAAAGTGAGCCTGGATGATCCCGAAGCACTGACTAAAATTCGT
CGTGAATTGAAAGAAGCGGGTGCAGAACGTATCTGGTATATCGCTGATGCTTTCCGTGCGGGCATGTCGGTTGAT
GGTGTGTTCAATCTGACCAATGTTGATCGCTGGTTCCTGGTGCAGATTGAAGAGCTGGTTCGTCTGGAAGAGAGC
GTGGCAGAACTCGGTATCAACGGCTTGACTGCTGAATTTATGCGTCACTTGAAACGTAAAGGTTTCGCCGATGCT
CGTTTGGCTAAATTGGTCGGTGCAGCAGAAAGTGAAGTCCGTAAACTGCGTTACAAATATGGTTTACACCCGGTT
TATAAGCGTGTTGATACCTGCGCGGCAGAGTTCTCGACGGATACGGCTTACATGTACTCCACCTACGAGGAAGAG
TGCGAATCTAACCCAACCAGCGATCGTCCGAAAGTGATGGTGCTGGGTGGCGGCCCGAACCGTATCGGACAAGGT
ATTGAGTTCGACTATTGCTGCGTACACGCTTCATTGGCACTGCGTGAAGACGGTTACGAAACCATCATGGTGAAC
TGTAACCCTGAGACGGTTTCAACCGATTATGACACCTCTGATCGTCTCTACTTCGAGTCAGTCACGCTGGAAGAT
GTGTTGGAAATTGTCCGTATTGAGAAACCACAGGGCGTTATCGTGCAGTACGGTGGTCAGACACCGCTGAAATTA
GCCCGCGAGTTGGAAGCGGCTGGCGTCCCCATTATTGGGACCAGTCCGGATGCCATTGACCGTGCCGAAGACCGT
GAGCGTTTCCAGCAGGCGGTAAATCGTCTGGGCCTGAAACAGCCAGCGAATGCCACCGTAGCGACTATCGAGCAG
GCGGTGGAAAAAGCCACTGGTCTGGGCTATCCACTGGTCGTACGCCCTTCTTATGTTTTGGGTGGCCGCGCGATG
GAAATTGTTTATGACGAGATTGACCTGCGCCGTTACTTCCAGAATGCCGTCAGTGTATCGAATGATGCGCCGGTA
TTGCTTGACCGCTTCCTTGATGATGCCGTCGAAGTGGATGTCGATGCCATTTGTGATGGTGAACGCGTGTTGATC
GGCGGCATTATGGAACATATAGAGCAAGCCGGGGTTCACTCTGGTGACTCAGCCTGTTCATTGCCTGCTTACACC
CTGAGCAAAGAAATTCAGGATGTGATGCGCCAACAAGTGGAAAAACTGGCCTTTGAACTCTGTGTCCGCGGCCTG
ATGAATGTGCAGTTTGCGGTGAAAAACAACGAAGTTTACCTGATTGAGGTTAACCCACGGGCGGCCCGTACTGTA
CCTTTCGTGTCCAAAGCGACCGGTATGCCACTGGCAAAAATTGCCGCTCGTGTGATGGTCGGCCAATCGCTGGCT
GAGCAGGGCATGCTGGAAGAAATTATTCCGCCTTACTACTCAGTCAAGGAAGTGGTACTGCCGTTTAATAAATTC
CCCGGTGTTGACCCAATTTTAGGGCCAGAAATGCGCTCTACCGGTGAAGTCATGGGGGTTGGCCGTACCTTCGCT
GAGGCGTTCTCTAAAGCGATGTTGGGCAGTCAATCTGGCATGAAAAAGAGTGGCCGTGCGCTATTATCCGTCCGT
GAGGGGGATAAGCACCGGGTGGTAGACTTGGCGGCGAAGCTGCTAAAACAAGGCTTTGAACTGGATGCAACCCAC
GGAACGGCGGTCGTGCTGGGCGAGGCGGGGATAAACCCACGTTTGGTTAACAAGGTGCATGAAGGCCGTCCGCAT
ATTCAGGACCGTATTAAGAATGGCGAGTACACCTATATCGTGAATACCACAGCTGGGCGTCAGGCGATTGAAGAT
TCTAAGCTGATCCGTCGCAGTGCTTTGCAATATAAAGTGCATTACGATACGACCTTGAACGGTGGTTTTGCTACG
GCGATGGCGTTAAATGCGGATCCAACCGATCAAGTGATTTCGGTGCAAGAGATGCATGCCAAGATTAAGAATATG
AAAGCGTAA

249. ***Yersinia pestis*** **(SEQ ID NO. 249)**

ATGCCAAAACGTACAGATATAAAAAGCATCCTGATTCTGGGCGCAGGCCCGATTGTTATCGGCCAGGCTTGTGAG
TTTGACTACTCCGGTGCCCAAGCGTGTAAAGCACTGCGCGAAGAGGGTTACCGTGTCATTTTGGTGAACTCCAAT
CTGGCGACTATCATGACTGACCCGGAAATGGCCGATGCAACTTATATCGAGCCAATTCATTGGGAAGTGGTGCGT
AAGATTATCGAAAAAGAGCGTCCAGATGCTGTTTTGCCTACGATGGGTGGCCAAACTGCACTGAACTGTGCATTG
GAACTGGAGCGTCAGGGTGTTCTGGCAGAATTTGGCGTCACCATGATTGGTGCGACCGCCGATGCCATCGATAAA
GCCGAAGACCGCCGTCGCTTTGATATCGCGATGAAGAAGATTGGTCTGGATACGGCCCGCTCAGGTATTGCGCAT

AACATGGAAGAAGCACTGGCTGTTGCCGCTGATGTGGGCTTCCCGTGCATTATCCGCCCATCCTTTACGATGGGG
GGCACTGGTGGCGGTATCGCTTATAACCGTGAAGAGTTCGAAGAGATCTGCGAGCGCGGTCTGGATTTGTCTCCA
ACCAAAGAGTTGTTGATTGACGAATCGCTGATTGGCTGGAAAGAGTACGAGATGGAAGTTGTCCGTGATAAAAAC
GACAACTGCATCATCGTTTGCTCCATTGAAAACTTCGATGCGATGGGGATTCACACCGGCGACTCTATCACTGTC
GCACCGGCTCAGACCCTGACCGATAAAGAATACCAAATCATGCGTAATGCCTCGATGGCGGTACTGCGTGAAATC
GGGGTAGAAACCGGGGGCTCTAACGTACAGTTCTCCGTCAACCCAAAAAATGGTCGTTTGATTGTCATTGAGATG
AACCCGCGTGTTTCTCGCTCTTCAGCACTGGCCTCTAAAGCAACCGGTTTCCCGATTGCCAAGATTGCCGCCAAA
CTGGCGGTCGGTTACACACTGGATGAGTTGATGAATGACATCACCGGTGGCCGTACTCCTGCGTCCTTTGAGCCT
TCTATCGACTATGTTGTTACCAAGATCCCACGCTTTAACTTTGAAAAATTTGCGGGTGCCAACGACCGTTTGACC
ACGCAAATGAAGTCTGTGGGTGAAGTCATGGCCATTGGCCGCACGCAGCAAGAATCACTGCAAAAAGCACTGCGC
GGGCTGGAAGTGGGCGCGACCGGTTTTGACCCGAAAGTGAGCCTGGATGATCCCGAAGCACTGACTAAAATTCGT
CGTGAACTGAAAGAAGCGGGTGCAGAACGTATCTGGTATATCGCTGATGCTTTCCGTGCGGGCATGTCGGTTGAT
GGTGTGTTCAATCTGACCAATGTTGATCGCTGGTTCCTGGTGCAGATTGAAGAGCTGGTTCGTCTGGAAGAGAGC
GTGGCAGAACTCGGTATCAACGGCTTGACTGCTGAATTTATGCGTCACTTGAAACGTAAAGGTTTCGCCGATGCT
CGTTTGGCTAAATTGGTCGGTGCAGCAGAAAGTGAAGTCCGTAAACTGCGTTACAAATATGGTTTACACCCGGTT
TATAAGCGTGTTGATACCTGCGCGGCAGAGTTCTCGACGGATACGGCTTACATGTACTCCACCTACGAGGAAGAG
TGCGAATCTAACCCAACCAGCGATCGTCCGAAAGTGATGGTGCTGGGTGGCGGCCCGAACCGTATCGGACAAGGT
ATTGAGTTCGACTATTGCTGCGTACACGCTTCATTGGCACTGCGTGAAGACGGTTACGAAACCATCATGGTGAAC
TGTAACCCTGAGACGGTTTCAACCGATTATGACACCTCTGATCGTCTCTACTTCGAGTCAGTCACGCTGGAAGAT
GTGTTGGAAATCGTCCGTATTGAGAAACCACAGGGCGTTATCGTGCAGTACGGTGGTCAGACACCGCTGAAATTA
GCCCGCGAGTTGGAAGCGGCTGGCGTCCCCATTATTGGGACCAGTCCGGATGCCATTGACCGTGCCGAAGACCGT
GAGCGTTTCCAGCAGGCGGTAAATCGTCTGGGCCTGAAACAGCCAGCGAATGCCACCGTAGCGACTATCGAGCAG
GCGGTGGAAAAAGCCACTGGTCTGGGCTATCCACTGGTCGTACGCCCTTCTTATGTGTTGGGTGGCCGCGCGATG
GAAATCGTTTATGACGAGATTGACCTGCGCCGTTACTTCCAGAATGCCGTCAGTGTATCGAATGATGCGCCGGTA
TTGCTTGACCGCTTCCTTGATGATGCCGTCGAAGTGGATGTCGATGCCATTTGTGATGGTGAACGCGTGTTGATC
GGCGGCATTATGGAACATATAGAGCAAGCCGGGGTTCACTCTGGTGACTCAGCCTGTTCATTGCCTGCTTACACC
CTGAGCAAAGAAATTCAGGATGTGATGCGCCAACAAGTGGAAAAACTGGCCTTTGAACTCTGTGTCCGCGGCCTG
ATGAATGTGCAGTTTGCGGTGAAAAACAACGAAGTTTACCTGATTGAGGTTAACCCACGGGCGGCCCGTACTGTA
CCTTTCGTGTCCAAAGCGACCGGTATGCCACTGGCAAAAATTGCCGCTCGTGTGATGGTTGGCCAATCGCTGGCT
GAGCAGGGCATGTTGGAAGAAATTATTCCGCCTTACTACTCAGTCAAAGAAGTGGTACTGCCGTTTAATAAATTC
CCCGGTGTTGACCCAATTTTAGGGCCAGAAATGCGCTCTACCGGTGAAGTCATGGGGGTTGGCCGTACCTTCGCT
GAGGCGTTCTCTAAAGCGATGTTGGGCAGTCAATCTGGCATGAAAAAGAGTGGCCGTGCGCTATTATCCGTCCGT
GAGGGGGATAAGCACCGGGTGGTAGACTTGGCGGCGAAGCTGCTAAAACAAGGCTTTGAACTGGATGCAACCCAC
GGAACGGCGGTCGTGCTGGGCGAGGCGGGGATAAACCCACGTTTGGTTAACAAGGTGCATGAAGGCCGTCCGCAT
ATTCAGGACCGTATTAAGAATGGCGAGTACACCTATATCGTGAATACCACAGCTGGGCGTCAGGCGATTGAAGAT
TCTAAGCTGATCCGTCGCAGTGCTTTGCAATATAAAGTGCATTACGATACGACCTTGAACGGTGGTTTTGCTACG
GCGATGGCGTTAAATGCGGATCCAACCGATCAAGTGATTTCGGTGCAAGAGATGCATGCCAAGATTAAGAATATG
AAAGCGTAA

250. Vibrio cholerae (SEQ ID NO. 250)

ATGCCAAAACGTACTGACATTCAAAGCATCCTTATCCTTGGTGCGGGTCCAATTGTTATCGGTCAGGCTTGTGAG
TTTGACTACTCAGGCGCGCAAGCGTGTAAAGCCCTGCGCGAAGAGGGTTACCGCGTTATTCTGGTTAACTCAAAC
CCAGCGACCATCATGACTGACCCAGAAATGGCCGATGCGACTTACATCGAGCCTATCCACTGGGAAGTGGTGCGT
AAGATCATCGAAAAAGAGCGCCCAGATGCGATTTTGCCCACCATGGGCGGCCAGACTGCGCTGAACTGTGCGCTG
GCACTCGAAAAACATGGCGTATTGGCTGAGTTTGGCGTTGAGATGATCGGCGCAACCGCCGATGCGATTGATAAA
GCGGAAGACCGCTCACGCTTTGATAAAGCGATGAAATCAATCGGCCTAGAGTGTCCTCGCGCTGATACCGCAAAA
AGCATGGAAGAAGCGTACAAAGTCCTCGATATGGTTGGCTTCCCATGTATCATCCGTCCTTCTTTCACCATGGGC
GGCAGCGGTGGTGGTATCGCTTACAACCGTGAAGAGTTTGAAGAAATCTGTACTCGCGGTCTGGATCTTTCACCG
ACCAATGAACTGCTGATCGATGAATCACTGATTGGTTGGAAAGAGTACGAGATGGAAGTGGTGCGTGATAAGAAC
GATAACTGCATCATCGTCTGTGCGATTGAAAACTTCGACCCAATGGGCATCCACACGGGTGACTCGATCACTGTC
GCTCCAGCGCAAACGCTAACTGACAAAGAATACCAAATCATGCGTAACGCCTCTTTGGCGGTACTGCGTGAAATC
GGCGTAGAAACCGGCGGTTCAAACGTTCAGTTTGGTATCAACCCGAAAGATGGCCGCATGGTGATCATCGAGATG
AATCCACGTGTATCGCGCTCTTCTGCGTTGGCTTCAAAAGCCACCGGTTTCCCAATTGCGAAAGTGGCGGCCAAA
CTGGCAGTGGGTTTCACTCTGGATGAGTTGATGAACGACATCACAGGCGGCGCAACACCAGCCTCGTTCGAACCG
ACCATCGACTACGTGGTCACTAAGATCCCTCGTTTCAACTTCGAAAAATTCGCCGGTGCCAATGACCGTCTGACT
ACACAAATGAAGTCAGTAGGTGAGGTGATGGCGATTGGTCGTAACCAACAAGAATCACTGCAAAAAGCACTGCGC
GGCTTGGAAGTGGGTGCGGCTGGTCTGGATGAGAAAGTGGATCTGGACGCGCCAGACGCTCTGACCAAAATTCGT
TATGAGCTGAAAGAAGCAGGCGCAGAGCGTATTTGGTACATCGCGGATGCATTCCGTGCCGGTATGTCAGTGGAT
GGGGTATTTAACCTGACCAACATCGATCGCTGGTTCCTAGTGCAAATTGAAGAACTGGTGAAGCTGGAAGCCGAA
GTGAAAGCCGGTGGCTTTGCGGGCTTGAACCAAGACGTACTGCGTAAGATGAAGCGCAAAGGCTTCTCTGATGCG
CGTTTGTCAAAACTGCTCGGCGTGAGCGAAAACGAAATCCGTCGTCTGCGTGACCAATACAACATCCACCCAGTT
TACAAGCGTGTGGATACCTGCGCGGCAGAATTTAAGTCAGATACGGCTTACATGTACTCCACGTATGATGAAGAG
TGTGAAGCCAATCCGACTGACAAAGACAAGATCATGGTGCTGGGCGGTGGTCCAAACCGTATCGGTCAAGGTATC
GAGTTTGACTACTGCTGTGTACACGCCGCGCTTGCACTGCGTGAAGATGGTTACGAAACCATCATGGTTAACTGT
AACCCAGAAACCGTATCAACCGATTACGACACCTCAGATCGCCTCTACTTTGAGCCTGTAACTCTAGAGGATGTG
CTGGCTATCGTGCGTGTTGAGAAGCCAAAAGGCGTGATCGTGCAGTACGGCGGTCAAACACCACTGAAACTGGCG
CGAGCGCTGGAAGCGGCTGGCGTACCTGTGATTGGTACCAGCCCAGATGCGATTGACCGCGCTGAAGACCGTGAA
CGTTTCCAACAAGCGGTACAGCGTTTAGGCCTCAAACAGCCAGACAACGCAACCGTAACCGCTATCGAGCAAGCG
ATTGAGAAGTCGCGTGAAATCGGTTTCCCACTCGTAGTTCGCCCCTCTTATGTTCTGGGTGGCCGTGCGATGGAG
ATTGTGTACGATGAGCAAGATCTGCGTCGTTACTTCAACGAAGCGGTGAGCGTGTCGAATGAATCACCAGTTCTG
CTGGATCGCTTCCTTGATGATGCAACCGAAGTGGACGTGGATGCGATTTGTGACGGTGAGCGCGTGGTGATTGGC
GGCATCATGGAGCACATTGAACAAGCGGGTGTTCACTCAGGTGACTCAGCCTGTTCTCTGCCGGCTTACACCTTG
AGCCAAGAAATCCAAGACAAGATGCGTGAGCAAGTTGAGAAGTTGGCATTTGAACTCGGTGTTCGTGGCCTGATG
AACATTCAGTTTGCAGTCAAAGACAACGAAGTTTACCTGATTGAAGTAAACCCACGTGCTGCGCGTACTGTGCCG
TTTGTTTCTAAAGCAACCGGTGCTCCGCTGGCGAAAATCGCGGCGCGCGTGATGGTTGGACAAACTCTGGAGCAA
CAAGGCTTCACCAAAGAGATCATTCCACCTTACTACTCAGTTAAAGAAGTGGTTCTGCCGTTCAACAAGTTCCCG
GGGGTTGACCCACTGCTTGGCCCTGAAATGCGCTCAACCGGTGAAGTGATGGGTGTGGGTGCCACGTTTGCTGAA
GCCTATGCTAAAGCAGAGTTGGGCTGTGGCTCGGTTTACCCTGAAGGTGGTCGTGCGCTACTTTCGGTGCGTGAA
GGTGACAAACAGCGTGTAGTGGATCTGGCTTCTAAGCTAGTGAAACTGGGTTACCAGTTGGATGCGACTCACGGT

ACTGCAGTGATTCTGGGCGAAGCGGGCATCAACCCACGTCTGGTTAACAAAGTGCATGAAGGTCGTCCACACATT
CTGGATCGCATCAAAAACCACGAGTACACCTACATTGTGAACACGGCTTCTGGCCGCCAAGCAATTGAAGACTCA
AAAGTACTGCGCCGTGGTGCATTGGCTCACAAAGTGAACTACACCACCACACTGAACGCCGCCTTCGCAACTTGT
ATGTCACACACGGCGGATGCCAAAGCATCCGTCACTTCAGTACAAGAGCTGCATGCGCGTGTAAAAGCGAACCAA
GCTTAA

251. Vibrio vulnificus (SEQ ID NO. 251)

ATGCCAAAACGTACTGACATTCAAAGCATTCTTATCCTAGGTGCTGGTCCAATTGTTATCGGTCAGGCTTGTGAG
TTTGACTACTCAGGCGCACAAGCATGTAAAGCGCTACGTGAAGAAGGTTACCGAGTTATCCTAGTAAACTCGAAC
CCAGCGACCATCATGACAGACCCAGATATGGCGGATGCGACCTACATCGAGCCAATTCAATGGGAAGTGGTACGC
AAGATTATCGAAAAAGAGCGTCCAGATGCGGTTCTACCAACCATGGGTGGTCAGACGGCTCTAAACTGTGCGCTT
GCGCTTGAAAAGCACGGCGTGCTAGCGGAATTTGGCGTAGAAATGATCGGTGCAACTGCTGATGCCATCGATAAA
GCGGAAGACCGTTCGCGTTTCGACAAAGCGATGAAATCTATCGGCCTAGAGTGTCCTCGTGCTGATACGGCGAAG
ACCATGGAAGAAGCGTACAAAGTGCTCGATATGGTTGGCTTCCCATGTATCATCCGCCCGTCATTCACCATGGGT
GGTACGGGGGGGGGTATCGCGTACAACAAAGAAGAGTTCGAAGAAATCTGTCGCCGTGGTCTTGACCTGTCGCCA
ACCAATGAACTGCTTATCGATGAATCTTTGATCGGTTGGAAAGAGTACGAAATGGAAGTGGTTCGCGACAAAGCG
GACAACTGTATCATCGTATGTTCAATCGAAAACTTCGACCCAATGGGCATCCACACCGGTGACTCTATCACCGTG
GCACCGGCTCAAACGCTGACAGATAAAGAATACCAACTGATGCGTAATGCGTCGCTAGCGGTACTTCGTGAAATC
GGTGTAGAGACAGGTGGTTCAAACGTGCAGTTTGGTATCAACCCGAAAGATGGCCGTATGGTTATCATCGAGATG
AACCCACGTGTATCGCGCTCTTCTGCTCTAGCGTCAAAAGCGACAGGTTTCCCTATTGCGAAGATTGCAGCGAAA
CTAGCCGTTGGCTTCACGCTTGATGAGCTACAAAATGACATCACTGGTGGTGCGACGCCAGCATCATTTGAACCG
ACCATCGACTACGTAGTGACTAAGATTCCTCGTTTCAACTTCGAGAAATTTGCCGGTGCTAACGACCGTTTGACG
ACGCAAATGAAGTCAGTTGGTGAAGTGATGGCCATTGGCCGTAACCAACAAGAATCACTGCACAAAGCGCTGCGC
GGTCTAGAAGTGGGCGCGACTGGTTTTGATGAGATGGTTGATCTTGATTCACCAGATGCACTGACCAAAATTCGC
CACGAGCTGAAAGAAGCGGGCGCTGAGCGTATTTGGTACATTGCCGATGCATTCCGTGCGGGTATGTCAGTTGAT
GGTGTGTTTAACCTAACTAACATCGATCGCTGGTTCCTGGTTCAAATCGAAGAGATTGTGAAGCTGGAAGAGCAA
GTGAAAGCGGGTGGTTTTGCTGGTTTAACTCAAGATGTGCTTCGTCAAATGAAGCGTAAAGGTTTCTCCGACGCT
CGCCTATCAAAACTACTCGGCGTGGCTGAAAGTGAAATCCGTCGTCTACGTGACCAATTCGACATCCACCCTGTA
TACAAGCGTGTTGATACCTGTGCGGCAGAATTCTCATCGGATACGGCTTACATGTACTCATCTTATGATGATGAG
TGTGAAGCGAACCCAACCGATAAAGAAAAGATCATGGTTCTGGGCGGTGGTCCAAACCGTATCGGTCAAGGTATT
GAGTTTGACTACTGCTGTGTACACGCTTCGCTAGCGCTACGTGAAGATGGTTACGAGACCATCATGGTGAACTGT
AACCCAGAAACCGTATCAACCGACTACGACACTTCAGACCGTCTCTACTTTGAACCGGTTACTCTAGAAGATGTG
TTGGCGATTGCTCGTGTTGAAAAGCCAAAAGGCGTGATCGTGCAGTACGGTGGTCAAACTCCACTGAAACTGGCG
CGTGCGCTAGAAGCGGCGGGTGTACCAATTATCGGTACTAGCCCTGATGCCATCGACCGTGCGGAAGACCGTGAG
CGTTTCCAACAAGCGGTTGACCGCTTAGGCCTGCTACAGCCAGAGAACGCAACCGTAACCACCATGGAGCAAGCG
GTTGAGAAGTCGCGTGAAATTGGCTTCCCATTGGTCGTTCGTCCATCTTACGTACTGGGTGGCCGCGCTATGGAA
ATCGTTTATGACGAGCAAGACCTACGCCGCTACTTCAACGAAGCGGTTAGCGTGTCGAACGAATCACCGGTTCTA
CTGGATCGCTTCCTAGACGATGCAATTGAAGTCGATATCGACGCTATCTGTGACGGTGAGCGCGTGGTGATTGGC
GGTATCATGGAGCACATCGAGCAAGCGGGTGTTCACTCAGGTGACTCAGCATGTTCACTGCCTGCTTACACGTTA
AGCCAAGAAATCCAAGACAAGATGCGTGAGCAAGTTGAAAAGCTGGCATTTGAGTTGGGCGTTCGTGGCCTAATG

AACACGCAGTTTGCCGTAAAAGACAACGAAGTGTACCTCATCGAAGTGAACCCTCGTGCTGCACGTACCGTTCCA
TTCGTATCGAAAGCGACCGGTGCACCACTTGCGAAAATCGCAGCACGTGTTATGGCTGGTCAGTCTCTGGAATCG
CAAGGTTTCACCAAAGAGATTATTCCTCCTTACTACTCGGTAAAAGAAGTGGTTCTGCCATTTAACAAGTTCCCT
GGCGTTGACCCACTATTGGGCCCTGAAATGCGCTCAACGGGTGAAGTGATGGGTGTAGGTGCAACTTTTGCTGAA
GCGTATGCGAAAGCAGAACTGGGTTGTGGCAATGTGTATCCTGAAGGTGGTCGTGCGCTGCTTTCGGTACGCGAA
GGCGACAAGCAACGTGTGGTTGACCTAGCGTCTAAATTACTGAAACTAGGGTACAAGCTGGATGCGACACACGGT
ACGGCAGTGATCTTAGGTGAAGCGGGCATCAACCCACGTCTAGTAAACAAAGTGCACGAAGGTCGTCCTCACATT
CTTGACCGCATCAAGAACAACGAATACACCTACATCGTGAACACGGCGGCTGGTCGTCAAGCGATTGAAGATTCG
AAAGTTCTACGCCGTGGCGCACTTGCAGAAAAAGTGAACTACACCACGACACTTAACGCGGCATTTGCGACCTGT
ATGTCTCATACGGCGGACGCGAAAGCAAGCGTGACGTCGGTACAGGAACTGCACGCGCAAGTGCAAGCGAGTTTG
AAAGCGTAA

252. ***Vibrio parahaemolyticus*** **(SEQ ID NO. 252)**

ATGCCAAAACGTACTGACATTCAAAGTATTCTAATTCTTGGTGCTGGTCCGATTGTTATCGGTCAGGCATGTGAG
TTTGACTACTCTGGCGCACAAGCGTGTAAAGCTCTTCGTGAAGAAGGCTACCGAGTTATTCTAGTTAACTCTAAC
CCAGCAACCATCATGACAGACCCTGAAATGGCAGATGCAACTTACATCGAGCCGATTCAATGGGAAGTTGTTCGC
AAGATCATTGAGAAAGAACGCCCAGATGCAGTATTGCCAACAATGGGTGGTCAGACGGCGCTTAACTGTGCGCTA
GATCTAGAGAAGCACGGCGTTCTTGCTGAATTCGGCGTAGAGATGATTGGCGCAACGGCTGACGCGATTGATAAA
GCAGAAGACCGTTCTCGCTTCGATAAAGCAATGAAGTCTATCGGCCTTGAGTGTCCTCGTGCTGATACCGCGAAG
ACGATGGAAGAAGCTTACAAAGTTTTAGACATGGTTGGCTTCCCTTGTATCATCCGTCCATCGTTCACCATGGGT
GGTACGGGTGGCGGTATCGCGTACAACAAAGAAGAGTTTGAAGAAATCTGTCGTCGTGGTCTGGATCTTTCTCCG
ACTAACGAACTTCTTATCGATGAATCGCTAATCGGTTGGAAAGAGTACGAAATGGAAGTAGTTCGCGACAAAGCG
GACAACTGTATCATCGTATGTTCAATCGAAAACTTCGACCCAATGGGCATCCACACCGGTGACTCAATCACGGTT
GCTCCAGCGCAAACTCTGACTGACAAAGAATACCAGCTAATGCGTAATGCATCGCTAGCGGTTCTGCGTGAAATC
GGTGTTGAGACAGGTGGTTCAAACGTACAGTTTGGTATCAACCCGAAAGATGGCCGTATGGTTATCATCGAGATG
AACCCACGTGTATCTCGCTCTTCTGCTCTGGCATCAAAAGCAACAGGTTTCCCAATCGCTAAGATTGCGGCGAAA
CTGGCTGTTGGCTTTACTCTAGACGAGCTGCAAAACGACATTACAGGTGGTGCAACTCCGGCATCATTCGAACCT
ACTATCGACTACGTAGTGACCAAGATTCCTCGTTTTAACTTCGAGAAATTTGCTGGCGCTAACGATCGACTGACG
ACTCAGATGAAGTCAGTTGGTGAGGTAATGGCGATTGGTCGTAACCAACAAGAATCTCTTCACAAAGCATTACGT
GGCCTAGAGGTTGGCGCGACTGGCTTTGATGAGATGGTTGACCTAGATGCACCTGACGCATTAACTAAGATTCGT
CACGAACTAAAAGAAGCTGGCGCAGAGCGTATCTGGTATATCGCAGATGCATTCCGTGCGGGCATGTCAGTGGAT
GGCGTGTTTAACCTGACGAACATTGATCGCTGGTTCCTAGTTCAAATTGAAGAGCTAGTTAAACTAGAAGAGCAA
GTGAAAGCCGGTGGCTTTGCTGGTCTAACAGAAGAAGTTCTACGCCAGATGAAACGTAAAGGTTTCTCTGATGCT
CGCCTATCTAAACTGTTAGGTGTGGCGGAAAGCGAAATCCGTCGTCTACGTGACCAGTTTGACATCCACCCTGTC
TACAAGCGAGTGGATACGTGTGCGGCTGAGTTCTCTTCTGATACGGCTTACATGTACTCATCTTACGATGAAGAG
TGTGAAGCAAACCCAACAGATAAAGACAAGATCATGGTACTGGGCGGTGGTCCAAACCGTATCGGTCAAGGTATC
GAATTCGACTACTGTTGTGTACATGCATCACTAGCGCTTCGTGAAGATGGCTACGAAACCATTATGGTGAACTGT
AACCCAGAAACAGTATCGACAGACTACGATACATCTGACCGTCTTTACTTCGAACCAGTAACTCTTGAAGATGTG
TTGTCTATCGCCCGCGTTGAAAAGCCAAAAGGTGTGATTGTTCAATACGGTGGTCAAACGCCACTTAAACTGGCT
CGCGCACTAGAAGCTGCAGGCGTGCCAATCATCGGTACAAGCCCGGATGCGATTGACCGCGCAGAAGACCGTGAG

CGTTTCCAGGCTGCAGTTGAGCGTTTAGGTCTTCTACAACCACAAAACGCAACAGTAACGGCGATGGAGCAAGCG
GTTGAGAAATCTCGTGAAATCGGCTTCCCACTCGTTGTTCGTCCATCTTACGTTTTGGGTGGTCGTGCGATGGAA
ATCGTCTACGATGAACAAGACTTGCGTCGTTACTTCAACGAAGCAGTAAGCGTATCGAATGAATCTCCAGTTCTA
CTAGACCGATTCCTAGATGATGCAACAGAAGTGGATATCGACGCTATCTGTGACGGTGAGCGCGTGGTTATCGGC
GGCATCATGGAGCACATTGAGCAAGCGGGCGTTCACTCTGGTGACTCTGCATGTTCGCTTCCTGCTTATACACTA
AGCCAAGAAATCCAAGACAAGATGCGTGAGCAAGTTGAGAAGCTGGCGTTCGAACTTGGTGTACGTGGCCTGATG
AACACGCAGTTTGCTGTAAAAGACAACGAAGTTTACCTAATTGAAGTAAACCCTCGTGCTGCGCGTACGGTACCA
TTCGTATCGAAAGCGACAGGCGCACCACTAGCGAAAATCGCGGCACGTGTAATGGCGGGTCAATCTCTGGAATCA
CAAGGTTTCACTAAAGAGATTATTCCTCCTTACTACTCAGTCAAAGAAGTCGTTCTACCTTTCAATAAGTTCCCT
GGCGTTGACCCTCTATTAGGTCCTGAAATGCGCTCAACAGGTGAAGTGATGGGTGTTGGTGCTACGTTTGCAGAA
GCTTACGCAAAAGCAGAGCTTGGCTGTGGCAGTGTGTACCCTGAAGGTGGTCGTGCGCTACTTTCTGTTCGTGAA
GGTGATAAGCAGCGTGTTGTTGACCTTGCGTCTAAGCTAGTAAAATTGGGTTACCAATTGGATGCGACTCACGGT
ACTGCTGTAATCCTTGGTGAAGCGGGTATTAACCCTCGCCTGGTAAACAAAGTACATGAAGGTCGTCCACACATT
CTTGACCGCATCAAGAACAACGAATACACCTACATTGTGAACACGGCTGCAGGTCGTCAAGCTATTGAAGATTCG
AAAGTTCTACGCCGCGGTGCTCTAGCAGAAAAAGTGAACTACACAACAACGCTAAACGCTGCGTTTGCAACGTGT
ATGTCTCACACTGCTGATGCAAAAGCGTCAGTAACTTCTGTTCAGGAGCTACACGCTAAAGTAAAAGCGAGTCTG
GAAGCGTAA

253. ***Vibrio fischeri*** **(SEQ ID NO. 253)**

ATGCCAAAACGTACTGATATTAAAAGCGTTCTAATTCTAGGTGCCGGTCCAATTGTAATCGGCCAAGCATGTGAA
TTTGACTACTCTGGTGCACAAGCATGTAAAGCACTTCGTGAAGAAGGCTACCGTGTTATTCTTGTGAACTCTAAC
CCAGCAACAATCATGACTGACCCAGACATGGCTGATGCAACGTACATTGAACCAATTCATTGGGAAGTGGTTCGT
AACATCATCGAAAAAGAGCGTCCAGATGCGGTATTACCAACAATGGGTGGTCAAACAGCATTAAACTGTGCGCTT
GATTTAGAAAAGCACGGTGTTCTTGCTGAATTCGGTGTTGAGATGATTGGTGCAACAGCTGATGCAATTGATAAG
GCGGAAGACCGTTCTCGTTTTGATAAAGCGATGAAGTCTATTGGACTTGAGTGTCCACGTGCTGATACAGCAAAA
ACCATGGAAGAAGCTTACGGCGTTCTAGATATGGTTGGTTTCCCATGTATTATTCGTCCATCATTTACGATGGGT
GGTACGGGCGGTGGTATCGCATACAACAAAGAAGAGTTCGAAGAAATTTGTCGTCGCGGTTTAGACCTTTCGCCA
ACTAACGAGCTTCTAATCGATGAATCATTAATCGGTTGGAAAGAGTACGAGATGGAAGTGGTTCGTGATAAGAAC
GATAACTGTATCATCGTATGTGCAATTGAAAACTTTGATGCGATGGGTATTCACACTGGTGACTCAATCACGGTT
GCGCCAGCACAAACGCTAACGGATAAAGAATACCAACTAATGCGTAATGCATCTCTAGCTGTACTGCGTGAGATT
GGTGTTGAAACGGGTGGCTCAAACGTACAGTTTGGTATTAACCCGAAAGATGGTCGTATGGTTATCATCGAAATG
AACCCACGAGTATCTCGTTCATCTGCACTTGCTTCTAAAGCAACAGGTTTCCCTATTGCAAAAATTGCAGCGAAA
TTGGCTATTGGCTTTACGCTTGACGAGCTAATGAATGACATTACAGGTGGGGCAACGCCTGCGTCATTTGAACCA
ACAATCGATTACGTTGTTACTAAGATCCCTCGTTTTAACTTCGAAAAATTCGCAGGGGCTAACGATCGCCTAACA
ACACAGATGAAATCAGTTGGTGAAGTGATGGCTATCGGCCGTAACCAACAAGAATCTCTACAAAAAGCACTTCGT
GGCCTAGAAGTAGGTGCGACTGGTTTTGATGAGATGGTTGATTTAGATGCTCCTGATGCATTAACAAAAATTCGT
CATGAACTGAAAGATGCTGGTGCTGAGCGTATTTGGTACATCGCTGATGCGTTCCGTGCGGGTATGTCTGTTGAT
GGTGTGTTTAATCTAACGAATGTTGATCGTTGGTTCCTAGTTCAAATTGAAGATTTAGTAAAAGAAGAAGAAGCG
GTTAAAGCGGGTGGTTTTGCTAATTTAACCGCAGATGCACTTCGTAAACTTAAGCGTAAAGGTTTTGCTGATGCG
CGTCTTTCTAAACTATTGGGCGTTGGTGAGAGTGAAATTCGTCGCCTGCGTGACCAGCATGATATTCACCCTGTA

TACAAGCGTGTAGATACGTGTGCTGCTGAGTTCTCATCAGATACGGCTTACATGTACTCATCTTATGATGAAGAG
TGTGAAGCAAATCCAACAGACAAAGATAAGATCATGATCTTAGGTGGCGGTCCAAACCGTATCGGTCAAGGTATT
GAGTTTGATTACTGTTGTGTACACGCATCATTAGCACTACGAGAAGATGGCTACGAAACTATCATGGTTAACTGT
AACCCTGAGACTGTTTCTACGGATTACGATACGTCTGACCGTCTATACTTCGAACCAGTTACTCTAGAAGATGTA
CTAGCAATTGCTCGTGTTGAGAAACCAAAAGGCGTGATAGTTCAGTACGGTGGTCAAACTCCACTTAAACTGGCT
CGCGCTCTTGAAGCAGCTGGTGTTCCAATCATAGGTACAAGCCCTGATGCTATCGACCGTGCAGAAGACCGTGAG
CGTTTCCAAGTTGCTGTCGACCGTTTGGAGCTTCTTCAACCAGAAAATGCAACGGTTACTACAATGGAGCAGGCG
ATTGATAAATCAAAAGAAATCGGCTTCCCACTCGTAGTACGTCCTTCTTATGTTCTTGGTGGTCGTGCGATGGAA
ATCGTATATGACGAGCAAGACTTACGTCGTTACTTCAATGAAGCAGTAAGCGTATCAAATGAATCTCCAGTACTT
CTTGATAGCTTCCTTGATGATGCTGTAGAAGTGGATGTTGATGCGATTTGTGACGGTGAGCAAGTGGTTATCGGC
GGTATCATGGAGCACATCGAGCAAGCGGGTGTTCACTCTGGTGACTCAGCATGTTCTCTTCCTGCTTATACATTA
AGCGAAGAAATCCAAGATGTAATGCGTGATCAAGTACGTAAGCTGGCATTCGAGCTAGGTGTTCGTGGCTTAATG
AATACACAGTTTGCTGTTAAAGATAACAAAGTATACCTAATCGAAGTTAACCCACGTGCTGCTCGTACGGTTCCA
TTCGTATCGAAAGCAACTGGTGCACCATTAGCTAAGATTGCAGCGCGTGTAATGGCGGGTCAATCTCTAGAGTCT
CAAGGCTTTACTAAAAGAGATCATCCCACCATACTACTCAGTTAAAGAAGTGGTATTACCGTTCAACAAATTCCCT
GGTGTTGACCCACTGTTAGGCCCAGAAATGCGCTCAACGGGTGAAGTTATGGGTGTTGGTACAACGTTTGCTGAA
GCATTTGCTAAAGCTGAACTTGGCTGTAGCAAAGAATACCCAGAAGGTGGTCGTGCATTACTTTCTGTTCGTGAA
GGTGATAAGAAACGTGTTGTAGATTTAGCAAAACATCTTGTTAAATTGGGTTACCAACTGGATGCAACTCACGGT
ACAGCAGTTATTCTTGGCGAAGCGGGTATTAACCCACGTCTAGTAAACAAGGTACATGAAGGCCGTCCTCATATT
CTTGACCGTATCAAGAATGGTGAGTACACCTACATCGTTAATACTGCAGCAGGTCGTCAAGCGATTGAAGATTCT
AAAGTATTACGTCGTGGTGCACTAGCTGAGAAAGTAAACTACACAACAACGCTAAATGCAGCATTTGCTAGTTGT
TTAGCTCATGAAGCGGATGACCGTAAAACGGTTAACTCTGTTCAAGAGCTACACGCTAAAGTGGCAGCTAAATAC
GCTTAA

254. ***Campylobacter jejuni*** **(SEQ ID NO. 254)**

ATGCCAAAACGAACAGATATTAAAAGCATTTTACTTATAGGAAGTGGTCCTATTGTGATAGGACAAGCTTGTGAA
TTTGATTATTCTGGAACTCAAGCCGCAAAGACTTTAAAAGAATTAGGATATCGTGTAGTATTAATCAACTCAAAT
CCTGCAACCATCATGACAGATCCCGAATTTGCAGATGCGACTTATATAGAACCCATAACAAAAGAAAGTATTTTA
AGTATTATTAAAAAAGAAAAAATTGATGCAATTTTGCCAACTATGGGTGGACAAGTAGCGTTAAATGTTGCTATG
GAAGTTTATGAAAGCGGACTTTTAGGAGATGTGAAATTTTTAGGCGCAAATCCTGAGGCGATTAAAAAAGGCGAA
GATCGTCAGGTTTTTAAAGAATGTATGAAAAAAATTGGCATGGATTTGCCAAAATCGATGTATGCGTATAATTAT
GACGAAGCTTTAAAAGCCGTAGATGAAATCGACTTTCCTTTGATGATCCGTGCTTCTTATACTTTAGGGGGTGCT
GGAAGTGGTGTGGTTTACAATATGGACGAATTTAAAGAACTTACCAATACTGCTTTAGCTTTATCACCTATTCAT
GAAATTTTGATTGAAGAAAGTTTGTTAGGTTGGAAAGAATATGAAATGGAAGTTATACGCGATAGAGCGGATAAT
TGTATCATAGTTTGTAGCATAGAAAATATCGATCCTATGGGAGTTCATACAGGAGATAGTATTACAATAGCTCCA
GCATTAACTTTGACAGATAAAGAATATCAAGTTATGCGTAATGCTTCTTTTGCTATTTTGCGTGAAATTGGTGTA
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GTAGGTTTTAGCTTAGATGAGATTAAAAATGATATTACAGGAACTCCTGCATCTTTCGAGCCTGTGATTGATTAT
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AAGCGTTTACTTTATGTTGCTCAAGCTTTTAGGGAAGGTTTTAGCGTAGAAGAACTTTATGAGCTTTGTAAAATA
GATCCTTGGTTTTTAACACAGATTAAAGAAATTGTAGATTTTGAAGAACAAATTGATATGGATATTTTAAACAAT
AAGGCTCTTTTGAGAAAAGCAAAAACTATGGGCTTTTCAGATAAAATGATAGCCTTGCTTGTAAATTTGAAAGAT
AATTTAGAATTAAGCCAAAATGATATTTATTATGTAAGAATGAAGCAAAAAATCATCGCAGAATTTAGTGAAGTG
GATACTTGTGCGGGTGAATTTGAAGCCTTAACTCCTTATCTTTATTCAAGTATCAATGTAAGCGAACTCACTCAA
AGTAAAAACGATGCTAAGGATAAAAAAGAAAAAAAAGTGATGATTATAGGTGGGGGGCCAAACCGTATAGGACAA
GGTATAGAATTTGACTATGCTTGCGTACATGCTTCTTTTGCGCTTAAAGATATGGGTATTAAAACTATTATGTAT
AATTGTAATCCTGAAACCGTTTCGACTGACTATGATACAAGTGATATTTTGTATTTCGAGCCTATTGATTTCGAA
CATTTAAGAGCGGTGATTGAGCGTGAAAAACCTGATGGAGTGATTGTGCATTTTGGTGGACAAACTCCTTTGAAA
TTTGCTAAGCGTTTAAGTGCTTTTGGAGCTAAGATTATAGGTACTAGCGCAAGAGTAATTGATATGGCAGAAGAT
AGAAAGAAATTTGCCGAATTTATTACAAAGCTAGGTATCAATCAGCCAAAAAATTCTACTGCAACAAGCGTAGAA
GAAGCGGTTCTTAAGGCTAGTGATATAGGGTATCCTGTGCTTGTAAGACCAAGTTATGTTTTAGGTGGGCGTGCG
ATGCGCGTGGTAAATGATGAGGCTGAACTTAGACTCTATATGCAAGAAGCTGTGGATGTAAGCGATAAAAGCCCT
GTTTTGATCGATCAGTTTTTAGACAATGCTACAGAAATTGATGTTGATGCGATTTGTGATGGCAAAGATGTTTAT
GTTGCAGGAATTATGGAGCACATAGAAGAAGCAGGAATTCATTCGGGTGACAGTGCTTGTTCTTTGCCGCCTTGC
AATATCGATGAAAAAATGCAAGAATTTATTGCACAAAAAACCGCAGATATTGCTTTAAATTTGGGAGTTGTAGGA
CTTTTAAATATACAATTTGCTTTACATAATAATGAGCTTTATATGATAGAGGTAAATCCTAGAGCTAGTCGTACC
ATACCTTTTGTTAGTAAAGCTACGGGTATTCCTTTAGCAAAAGTGGCAACGCGTGTGATGTGGCAAGGAAATTTA
AAAGAAGCTTTAAAATTTTATGATACTTTTAAAGTGGTTAATTTTGATACTAAAATTTTACGCCCTAAAACTCCA
AAATATATGAGCGTGAAAGAAGCAGTATTTCCATTTGCAAAACTTAGTGGAAGTGATTTAGAATTAGGTCCTGAA
ATGCGTTCAACGGGTGAAGTTATGGGTATAAGCAAGGATTTTGCAAATTCTTATGCGAAAAGTCAAATTGCATCG
TTTAATCATCTTCCAGAGCAAGGCGTGGTATTTATCTCCTTAAAAGATAAGGATAAAAAATATACCAAAAAAATC
GCTGCAGAATATGTAAAGCTTGGCTTTAAGCTTATGGCAACAGGGGGAACTTGCAAGGAAATTTTAGAAAGTGGT
TTTGAGTGCGAACTTGTACATAAAATTTCAGAAGGACGCCCCAATGTTGAAGATAAATTGAAAAATGGAGAAATT
CACTTAGTTATCAATACAAGCGATAGTCACAGTTTTAAAGGCGATACGAAAAAAATTCGTGAAAATATTATTCGT
TTTAAAATACCTTATTTTACAAATTTACGATCAGCTTTAGCAGGTGCAAAATCGATTAAAGCTATACAGAGTAAA
TCTTGCCTAGATGTAAAGAGTTTGCAAGAGTGGCTTAAATCTTGA

255. ***Corynebacterium diphtheriae*** **(SEQ ID NO. 255)**

ATGCCAAAGCGCAATGACATCAAACACGTCCTGGTTATCGGTTCCGGTCCAATCGTTATCGGACAAGCGTGTGAG
TTTGACTATTCCGGAACACAAGCGTGCCGAGTTCTTAAAGAAGAAGGACTTCGCGTCACTTTGATCAACTCGAAT
CCGGCGACAATCATGACGGATCCAGAGTTTGCTGATCATACATATGTTGAGCCGATTGAGCCGGAATATATTGAA
AAGATTTTTGAAAAAGAGATCGCTGAGGGACACCCCGTTGATGCTGTCTTGGCAACACTTGGTGGGCAAACGGCA
TTGAATGCCGCTATCAAATTAGATCGTCGCGGATCTCTCGAAAAATACAACGTAGAACTCATCGGTGCAGACATC
GACGCCATTGAGCGCGGCGAGGACCGCCAGAAATTCAAAGATATCGTTGCGAAAATTGGCGGCGAATCAGCGCGT
TCCCGTGTATGCCACAATATGCAAGAGGTATATGACACCGTTGAAGAGCTCGGCCTTCCGGTAGTTGTACGCCCT
TCCTTCACTATGGGCGGTTTGGGGTCCGGACTTGCCTTCAATCAAGAGGATCTCGAACGAATTGCCGGCGGTGGA
CTCGCAGCGTCTCCCGAAGCAAACGTGCTTATTGAAGAATCAATTCTTGGCTGGAAAGAATATGAGCTTGAGCTC

ATGCGTGATGGTGCTGATAACGTTGTGGTTATTTGTTCCATTGAAAATGTTGATGCACTAGGCGTACACACAGGT
GATTCTGTTACTGTCGCACCTGCTTTGACTCTGACTGATCGTGAATACCAAAAGATGCGTAATCAAGGCATCGCG
ATTATTCGTGAAGTAGGGGTCGACACCGGTGGATGTAACATCCAATTTGCGGTAAATCCACGTGATGGTCGTTTG
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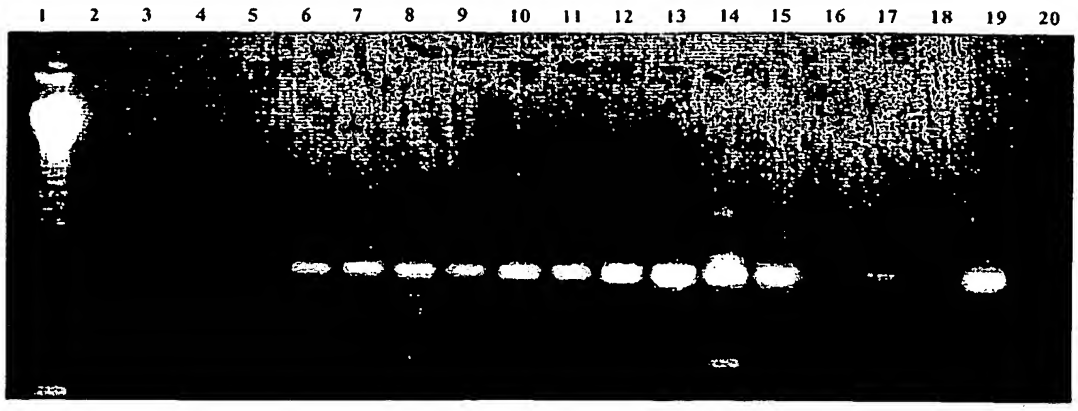
GACACATTGACTACAACGATGAAGTCCGTTGGTGAGGCAATGGCTCTTGGCCGTAATTACATCGCGGCGTTGGGT
AAAGTCATGCGTTCGCTAGAAAACAAGCAAGTTGGTTTCTGGACAACAAGTGATGAATTCTTTGCTGGGGATCGC
GCTAAGAATCTTGACGCAGTGTTAGAAGATCTGAAACGCCCGACAGAAGGGCGGATGTATGACGTGGAGCTGGCT
CTTCGCCTTGGCGGCTCAATTGAAGAAGTACATCAAGCGTCTGGGCTTGATCCATGGTTCTTGGCGGAGCTTCAG
TCATTAATAGATTTCCGAGAATCCTTGATGAAGGCACCGGTGCTGGATGAGCCGTTGCTTCGAAAAGCCAAATTC
TTCGGATTGTCTGACCGCCAAATCGCGGCCCTTCGTCCCGAATTTGCAGGGGAAGACGGCGTTCGTCGCTTGCGA
TGGTCATTGGGAGTACGGCCAGTATTTAAGACTGTAGATACGTGCGCTGCAGAATTTGAAGCTACGACTCCATAC
CATTATTCAGCATATGAACTCGATCCAGCTGCTGAATCGGAAGTACGTCCTCAAACTGAAAAAGACAAGATCATC
ATTTTGGGATCAGGTCCGAACCGAATTGGCCAAGGTATTGAGTTTGACTACTCATGTGTTCATGCTGCGCTCGAA
CTTTCACGCGTGGGGTATGAGACAGTTATGGTTAACTGCAACCCAGAAACCGTGTCGACAGATTATGACACCGCT
GACCGTCTGTATTTCGAGCCACTGACATTTGAAGATGTTATGGAGGTCTACCACGCCGAATCAGAATCTGGACAT
GTTGCCGGTGTGATCGTTCAGCTTGGCGGACAAACTCCACTTGGACTAGCCGAAAAGCTTCGTGATGCGGGTGTC
CCGGTCATTGGTACTACTCCAGAGGCTATCGATCTAGCTGAAGATCGAGGAGAATTCGGTGAAGTATTGCGTAAA
GCGCAATTGCCAGCTCCAGCTTTCGGTACCGCTACATCATTTGAGGAAGCTAAAACTGTTGCCAATAACATTGGT
TACCCAGTATTAGTTCGTCCATCTTACGTCTTGGGCGGCCGTGGCATGGAAATCGTATACGACGAAAATTCCTTG
CACGCGTACATCGAGCGAGCTACCGAGATCACGAGTGATCACCCAGTGCTCGTGGATCGCTTTTTAGATAATGCG
ATTGAAATTGACGTTGATGCGCTTTGTGATGGCGAAAATGTCTACCTTGCTGGTGTTATGGAACACATTGAAGAA
GCTGGTATTCACTCCGGTGACTCTGCTTGTGCGCTGCCACCTATGACGCTAGGTGCCGAAGATATCGAAAATGTC
CGTCGCTCAACAGAAGCGTTGGCACATGGTATCGGCGTTAAAGGATTGATGAATGTTCAATATGCCTTGAAGGAT
GACATTCTTTATGTGATTGAGGCCAACCCTCGTGCATCTCGTACAGTGCCTTTTGTCTCCAAAGCTACGGGTGTC
CACTTAGCAAAAGCAGCAGCGCGAATCATGACTGGGGCAACGATTCCTGAGCTTCAAGCGGAGGGAATGATTCCA
ACCGGTTACGATGGTGGTTCTTTGCCAGAGAATTCGCCGATTGCGGTGAAGGAAGCAGTACTTCCGTTCAATCGA
TTCCGTCGTCCTGATGGCACAATGTTGGATACTTTGCTAAGTCCTGAGATGAAATCAACGGGCGAAGTCATGGGG
CTGGCTGATAATTTTGGTGCTGCATATGCTAAGGCAGAACAGGCGGCTTTTGGTGCACTTCCAACTGAAGGCACT
GTCTTCGTATCAGTAGCAAACCGCGATAAGCGTACTTTGATTTTCCCAATTCAGCGCCTAGCTTCACTTGGATTC
CGAGTACTGGCAACATCAGGCACAGCCGGAATGCTACGTCGCAATGGTATTGAATGCGAAGTTGTATTGAAGCAG
ACCCAAGTGCAGGAAGCACGACAAAACGGCACTGAGGGGCAGCGTTCCGTAGTGGATATGATTAAAGCCGGCGAG
GTGGACCTCATTCTTAATACACCTGCAGGGTCTTCAGGAGCGCGTCACGACGGTTACCAGATTCGCGCAGCGGCA
GTCAACGTTGGCGTTCCTCTGGTTACTACCGTGCAAGGTGTTACTGCGGCAGTACAGGGAATCGAAGCGCTTAGG
GCTGGTGAGCTCAGCGTTCGAGCGCTGCAAGAGCTAGATCATTCGGTGACTCGATGA

Figure 10. Amplification of molecular marker VI (pgi) in Gram-negative bacteria



1. DNA Ladder (123 bp)
2. Pseudomonas aeruginosa
3. Pseudomonas diminuta
4. Stenotraophomas maltophilia
5. Pseudomonas pseudoalcaligenes
6. Burkholderia cepacia
7. Pseudomonas putida
8. Pseudomonas syringae
9. Providencia stuartii
10. Proteus mirabilis
11. Proteus vulgaris
12. Citrobacter freundii
13. Enterobacter aerogenes
14. Klebsiella oxytoca
15. Klebsiella pneumoniae
16. Haemophilus influenzae
17. Leigonella pneumophila
18. Serratia liquefasciens
19. Serratia marcescens
20. Negative control

Figure 11. Molecular marker VI (pgi) sequences amplified from different Gram negative bacteria (SEQ ID NOs 256-277).

256. Providencia stuartii (SEQ ID NO. 256) *PSTU*

TATGGTNNGCGATTGGCCTATCCATTATCTTGTACCGTGGGTTATGACAATTTTGTTCAGCTCCTCGAAGGGGCT
CATGCAATGGATAAGCACTTTACCCAAACGGCTTTTGAAAAGAATATTCCTGTTCTCCTTGGCTTAATTGGCATT
TGGTATAACAACTTTTTTGAGTCGGAAACTGAAGCGATTCTGCCATATGATCAATATATGCACCGTTTTGCCGCT
TATTTCCAACAAGGAAATATGGAGTCAAATGGTAAGTATATTGACCGTAATGGCAACAAAGTTTCTTATCAAACG
GGGCCAATTATTTGGGGTGAACCGGGCACGAACGGCCAACATGCCTTTTATCAATTGATCCATCAAGGAACTAAA
ATGATCCCTTGTGATTTTATTGCGCCAGCAGTAACGCATAATCCACTCGGTGATCATCACGATAAATTACTGTCG
AACTTCTTCGCC

257. Enterobacter cloaceae (SEQ ID NO. 257) *ECLO*

CTTTGTGGTNCTGCGATCGGCCTGTCTATCATTCTCTCCGTGGGCTTCGACAACTTTGTTGAGCTGCTCTCCGGC
GCGCACGCGATGGACAAACACTTCTCCACCACCGCACCTGAGAAAAACCTGCCGGTGCTGCTGGCGCTGATCGGT
ATCTGGTACAACAACTTCTTCGGCGCAGAGACCGAAGCGATCCTGCCGTACGACCAGTACATGCACCGCTTCGCG
GCTTACTTCCAGCAGGGCAATATGGAATCCAACGGTAAATACGTTGACCGTAACGGCAACGCGGTGGATTACCAG
ACTGGCCCAATCATCTGGGGTGAGCCAGGCACCAACGGTCAGCACGCGTTCTACCAGCTGATTCACCAGGGGACC
AAAATGGTACCGTGCGATTTCATCGCCCCGGCTATCACCCACAATCCACTGTCTGATCACCATCCTAAACTGCTG
TCTAACTTCTTCGCCC

258. Proteus mirabilis (SEQ ID NO. 258) *PMIR*

CTTATGGTNNGCAATTGGTTTATCCATTGTATTATCTATTGGTTATGACAACTTTGAGCAGTTACTGTCCGGTGC
TCATGCTATGGATAATCACTTTAGAACCACTGAAGCTGAAAATAATATTCCGATGATATTGGCGCTTATTGGCAT
TTGGTATAACAATTTTTTTGGTACCGAAACTGAAGCGATTCTGCCATACGATCAATATATGCACCGTTTTGCTGC
TTACTTCCAACAAGGTAATATGGAATCCAATGGTAAATATATCGACCGTGATGGAAACAAAGTCAGTTACCAAAC
CGGACCTATTATTTGGGGAGAGCCGGGGACTAATGGTCAGCATGCGTTTTATCAATTAATTCATCAAGGAACCAA
ACTGATCCCTTGTGATTTTATTGCACCAGCGATCAGCCATAATCCATTATCTGATCATCATGCAAAACTAATGTC
GAACTTCTTCGCAA

259. Proteus vulgaris (SEQ ID NO. 259) *PVUL*

TTATGGTNGCTATTGGTTTGTCTATCGCTCTTTCCGTTGGTTATGATAATTTTGAGCAATTATTGGAAGGTGCCC
ATGCAATGGATAACCATTTCCAAACGACAGCTGCTGAAAATAACCTACCAATGATCCTCGCGCTGATTGGCATTT
GGTATAACAATTTTTTTGGTACAGAAACTGAAGCGATTCTGCCCTATGATCAATACATGCATCGTTTTGCAGCCT
ATTTCCAACAAGGCAATATGGAGTCAAATGGTAAGTATATTGATCGCGATGGTAACGCAGTTAACTATCAAACTG
GACCTATTATTTGGGGTGAACCAGGAACTAATGGTCAGCATGCGTTTTACCAATTAATTCATCAGGGTACAAAAA
TGATCCCTTGTGATTTTATTGCGCCTGCAATTAGTCATAATCCATTAAGTGATCACCATGCTAAGTTGATGTCTA
ACTTCTTCGCNA

260. ***Enterobacter aerogenes*** **(SEQ ID NO. 260)** ***EAER***

CTGTGGTCCGCCTCGGTCTGTCTATCATTCTGTCCGTCGGCTTCGACAACTTCGTTCAGCTGCTGTCCGGCGCCC
ACGCCATGGACAAACACTTCTCTACCACGCCGGCTGAGAAAAACCTGCCGGTACTGCTGGCGCTGATTGGTATCT
GGTACAACAATTTCTTCGGCGCCGAAACCGAAGCAATTCTGCCGTACGATCAGTACATGCATCGCTTTGCCGCTT
ACTTCCAGCAGGGCAACATGGAATCCAACGGTAAGTACGTTGACCGTAACGGCAACGTCGTGGATTACCAGACTG
GCCCTATCATCTGGGGCGAGCCGGGGACTAACGGTCAGCACGCGTTCTATCAGCTGATCCACCAGGGCACCAAAA
TGGTACCGTGCGATTTCATCGCCCCGGCTATCACCCATAACCCGCTGTCTGACCACCATCAGAAACTGCTGTCTA
ACTTCTTCGCAA

261. ***Klebsiella pneumoniae*** **(SEQ ID NO. 261)** ***KPNE***

CTGTGGTCGGCGATTGGTCTGTCCATCATTCTCTCCGTGGGCTTCGACAACTTCGTTGAGCTGCTGTCCGGCGCG
CATGCGATGGATAAGCACTTCTCCACCACTCCGGCGGAGAAAAACCTGCCGGTGCTGCTGGCGCTGATCGGCATC
TGGTACAACAACTTCTTCGGTGCGGAAACCGAAGCGATTCTGCCGTACGACCAGTACATGCACCGCTTTGCCGCT
TACTTCCAGCAGGGCAACATGGAGTCCAACGGTAAGTATGTTGACCGTAACGGCCACGCGGTAGACTACCAGACT
GGCCCAATCATCTGGGGTGAGCCGGGCACCAACGGTCAGCACGCGTTCTACCAGCTGATCCACCAGGGCACCAAA
ATGGTACCGTGCGATTTCATCGCTCCGGCTATCACCCACAACCCGCTGTCTGACCACCATCAGAAACTGCTGTCT
AACTTCTTCGCNAA

262. ***Escherichia coli 0157 :H7*** **(SEQ ID NO. 262)** ***ECO157***

TTTGTGGTNGCGATTGGCCTGTCGATTGTTCTCTCCATCGGCTTTGATAACTTCGTTGAACTGCTTTCTGGCGCA
CACGCGATGGACAAGCATTTCTCCACCACGCCTGCCGAGAAAAACCTGCCTGTACTGTTGGCGCTGATTGGCATC
TGGTACAACAATTTCTTTGGTGCGGAAACTGAAGCGATTCTGCCGTATGACCAGTATATGCACCGTTTCGCGGCG
TACTTCCAGCAGGGCAATATGGAGTCCAACGGTAAGTATGTTGACCGTAACGGTAACGTTGTGGATTACCAGACT
GGCCCGATTATCTGGGGTGAACCAGGCACTAACGGTCAGCACGCGTTCTACCAGCTGATCCACCAGGGAACCAAA
ATGGTACCGTGCGATTTCATCGCTCCGGCTATCACCCATAACCCGCTCTCTGATCACCACCAGAAACTGCTGTCT
AACTTCTTCGCNAA

263. ***Escherichia coli*** **K12 (SEQ ID NO. 263)** **ECOK12**

CTTTGTGGTNGCGATTGGCCTGTCGATTGTTCTCTCCATCGGCTTTGATAACTTCGTTGAACTGCTTTCCGGCGC
ACACGCGATGGACAAGCATTTCTCCACCACGCCTGCCGAGAAAAACCTGCCTGTACTGCTGGCGCTGATTGGCAT
CTGGTACAACAATTTCTTTGGTGCGGAAACTGAAGCGATTCTGCCGTATGACCAGTATATGCACCGTTTCGCGGC
GTACTTCCAGCAGGGCAATATGGAGTCCAACGGTAAGTATGTTGACCGTAACGGTAACGTTGTGGATTACCAGAC
TGGCCCGATTATCTGGGGTGAACCAGGCACTAACGGTCAGCACGCGTTCTACCAGCTGATCCACCAGGGAACCAA
AATGGTACCGTGCGATTTCATCGCTCCGGCTATCACCCATAACCCGCTCTCTGATCATCACCAGAAACTGCTGTC
TAACTTCTTCGCNAA

264. ***Citrobacter freundii*** **(SEQ ID NO. 264)** ***CFRE***

NTGTGGTCTGCAATCGGCCTGTCCATCATCCTGTCCGTAGGCTTCGACAATTTTGTTGAGCTGCTCTCCGGCGCG
CATGCGATGGACAAACACTTCTCCACCACCCCGGCTGAGAAAAACCTGCCGGTGCTGCTGGCGCTGATCGGTATC

TGGTACAACAACTTCTTCGGTGCCGAAACCGAAGCGATTCTGCCGTATGACCAGTATATGCACCGTTTCGCGGCC
TACTTCCAGCAGGGCAACATGGAATCCAACGGTAAATACGTTGACCGTAACGGCAATGCGGTGGATTACCAGACT
GGCCCAATCATCTGGGGTGAGCCGGGTACTAACGGCCAGCATGCGTTCTACCAGCTGATCCACCAGGGCACCAAA
ATGGTGCCGTGCGATTTCATCGCGCCGGCAATCACCCACAACCCGCTGTCGGATCACCATCCGAAACTGCTGTCT
AACTTCTTCGCAA

265. Haemophilus influenzae (SEQ ID NO. 265) *HINF*

CTTNGGTNGCCTTGGTCTTTCAATTGCGCTATCAATTGGCTTTGAAAACTTTGAAGCGTTATTAAATGGCGCGCA
TGAAATGGATGAACATTTCCGCTCTACTCCAATCGAACAAAATATCCCAACCACTTTAGCATTAGTTGGTTTATG
GAATACCAATTTTCTTGGTGCGCAAACAGAAGCGATCTTACCTTATGATCAATATTTACATCGCTTCGCAGCTTA
TTTTCAACAAGGTAATATGGAATCAAATGGTAAATATGTGGATCGTGATGGCAATGTCATTAACAATTATCAAAC
TGGCCCTATCATTTGGGGAGAACCTGGTACAAACGGACAACACGCGTTCTATCAATTAATTCATCAAGGCACTAC
TTTAATTCCTTGTGATTTTATCGCACCCGCTCAAAGCCATAACCCATTGGCAGATCATCACAATAAATTGCTTTC
AAACTTCTTCGCCAA

266. Serratia marcescens (SEQ ID NO. 266) *SMAR*

TGTGGTCGGCGATCGGTTTGTCGATTGCGCTGTCCATCGGTTATGACAACTTCGAGCAGCTGCTGAGCGGCGCGC
ACGCCATGGACAAGCACTTCGCCGAAACGCCGGCGGAGAAAAACCTGCCGGTGTTGCTGGCGCTGATCGGTATTT
GGTACAACAACTTCTTTGGCGCCGAAACCGAAGCCATTCTGCCGTACGATCAGTACATGCACCGTTTTGCCGCTT
ACTTCCAGCAGGGCAACATGGAATCCAACGGCAAGTACGTCGATCGCAACGGCAACCCGGTGGATTACCAGACCG
GTCCCATCATTTGGGGCGAGCCGGGCACCAACGGCCAGCATGCGTTCTATCAGTTGATCCACCAGGGCACCAAGC
TGGTGCCGTGCGATTTCATCGCGCCGGCCATCAGCCATAACCNGCTGGGCGATCATCACGCCAAACTGCTGTCCA
ACTTCTTGCCAA

267. Morganella morganii (SEQ ID NO. 267) *MMOR*

GTGGTCGGCGATTGGTCTGTCTATCGTGCTCTCTGTCGGTTATGACAACTTCACGCAGTTGCTCGATGGTGCGTA
TGCCATGGACAAGCACTTCACCGAAACTGAATTCTCACAGAATATTCCGGTGCTGCTGGCGCTGATTGGTCTGTG
GTACAACAATTTCTTCGGTGCGGAAACAGAAGCAATTCTGCCTTATGATCAGTACATGCACCGCTTTGCGGCCTA
TTTCCAGCAGGGCAATATGGAGTCCAACGGGAAATATGTGGATCGTAACGGTAAGGTGGTTTCTCATCAGACCGG
TCCGGTTATCTGGGGTGAGCCCGGCACCAACGGGCAGCATGCGTTTTATCAGCTGATCCATCAGGGTACCAAACT
GATCCCGTGTGATTTTATCGCACCGGCTCAGAGCCATAATCCGCTGGGGGATCATCACAGTAAACTGCTGTCGAA
CTTCTTCGCCAA

268. Klebsiella oxytoca (SEQ ID NO. 268) *KOXY*

GTGGTAGCCTCGGCCTGTCCATCATCCTGTCCGTGGGCTTCGACAACTTTGTTGAGCTGCTCTCCGGCGCGCACG
CGATGGATAAACACTTCTCCACCACCCCGGCTGAGAAAAACCTGCCGGTGCTGCTGGCGCTGATCGGTATCTGGT
ACAACAACTTCTTCGGCGCTGAAACCGAAGCGATTCTGCCGTACGACCAGTATATGCACCGTTTTGCCGCTTACT
TCCAGCAGGGCAACATGGAATCCAACGGTAAATACGTTGACCGTAACGGCAACGCCGTGGATTACCAGACGGGCC
CAATCATCTGGGGCGAGCCGGGGACCAACGGTCAGCACGCGTTCTACCAGCTGATTCACCAGGGGACCAAAATGG

TGCCTTGCGACTTTATCGCGCCGGCGATTACGCATAACCCGCTGTCCGATCACCATCCGAAGCTGCTGTCTAACT
TCTTCGCCCAA

269. Shigella sonnei (SEQ ID NO. 269) *SSON*

TTTGTGGTNGCGATTGGCCTGTCGATTGTTCTCTCCATCGGCTTTGATAACTTCGTTGAACTGCTTTCTGGCGCA
CACGCGATGGACAAGCATTTCTCCACCACGCCTGCCGAGAAAAACCTGCCTGTCCTGCTGGCGCTGATTGGCATC
TGGTACAATAATTTCTTTGGTGCGGAAACTGAAGCGATTCTGCCGTATGACCAGTATATGCACCGTTTCGCGGCG
TACTTCCAGCAGGGCAATATGGAGTCCAACGGTAAGTATGTTGACCGTAACGGTAACGTTGTGGATTACCAGACT
GGCCCGATTATCTGGGGTGAACCAGGCACTAACGGTCAGCACGCGTTCTACCAGCTGATCCACCAGGGAACCAAA
ATGGTACCGTGCGATTTCATCGCCCCGGCTATCACCCATAACCCGCTCTCTGATCACCACCAGAAACTGCTGTCT
AACTTCTTCGCAA

270. Salmonella enteritidis (SEQ ID NO. 270) *SENT*

GCTGTGGTCTGCNTCGGGCTGTCCATTATTCTGTCCGTCGGTTTCGACAACTTTGTCGAGCTGCTTTCCGGCGCG
CACGCGATGGACAAGCATTTCTCCACCACTCCGGCGGAGAAAAACCTACCCATTCTGCTGGCGTTGATTGGCATC
TGGTACAACAATTTCTTCGGCGCGGAAACCGAAGCCATTCTGCCGTACGACCAGTATATGCACCGTTTCGCCGCC
TACTTCCAGCAGGGTAACATGGAATCCAACGGTAAATACGTTGACCGTAGCGGCAACGCCGTGGATTACCAGACA
GGCCCAATTATCTGGGGCGAACCAGGCACCAACGGTCAGCACGCGTTTTATCAATTGATTCACCAGGGTACTAAA
ATGGTGCCGTGTGATTTTATCGCCCCGGCTATCACCCATAACCCGCTATCCGATCATCATCAGAAGCTGCTGTCT
AACTTCTTCGCAA

271. Salmonella enterica hadar (SEQ ID NO. 271) *SHAD*

CGCTGTGGTCTGCNTCGGGCTGTCCATTATTCTGTCCGTCGGTTTCGACAACTTTGTCGAGCTGCTTTCCGGCGC
GCACGCGATGGACAAGCATTTCTCCACCACTCCGGCGGAGAAAAACCTACCCATTCTGCTGGCGTTGATTGGCAT
CTGGTACAACAATTTCTTCGGCGCGGAAACCGAAGCCATTCTGCCGTACGACCAGTATATGCACCGTTTCGCCGC
CTACTTCCAGCAGGGTAACATGGAATCCAACGGTAAATACGTTGACCGTAGCGGCAACGCCGTGGATTACCAGAC
AGGCCCAATTATCTGGGGCGAACCAGGCACCAACGGTCAGCACGCGTTTTATCAATTGATTCACCAGGGTACTAA
AATGGTGCCGTGTGATTTTATCGCCCCGGCTATCACCCATAACCCGCTATCCGATCATCATCAGAAGCTGCTGTC
TAACTTCTTCGCAA

272. Salmonella enterica brandenburg (SEQ ID NO. 272) *SBRA*

NCGCTGTGGTCTGCCTCGGGCTATCCATTATTCTGTCCGTCGGTTTCGACAACTTTGTCGAGCTGCTTTCCGGCG
CACACGCGATGGACAAGCATTTCTCCACCACTCCGGCGGAGAAAAACCTACCCGTTCTGCTGGCGTTGATTGGCA
TCTGGTACAACAATTTCTTCGGCGCGGAAACCGAAGCCATTCTGCCGTACGACCAGTATATGCACCGTTTCGCCG
CCTACTTCCAGCAGGGCAACATGGAATCCAACGGTAAATACGTTGACCGTAACGGCAACGCCGTGGATTACCAGA
CAGGCCCAATTATCTGGGGCGAACCAGGCACCAACGGTCAGCACGCGTTTTATCAATTGATTCACCAGGGTACTA
AAATGGTGCCGTGTGATTTTATCGCCCCGGCTATCACCCATAACCCGCTATCCGATCATCATCAGAAGCTGCTGT
CTAACTTCTTCGCNAA

273. ***Salmonella enterica*** **derby (SEQ ID NO. 273) SDER**

GCTGTGGTCTGCNTCGGGCTGTCCATTATTCTGTCCGTCGGTTTCGACAACTTTGTCGAGCTGCTTTCCGGCGCG
CACGCGATGGACAAGCATTTCTCCACCACTCCGGCGGAGAAAAACCTACCCATTCTGCTGGCGTTGATTGGCATC
TGGTACAACAATTTCTTCGGCGCGGAAACCGAAGCCATTCTGCCGTACGACCAGTATATGCACCGTTTCGCCGCC
TACTTCCAGCAGGGTAACATGGAATCCAACGGTAAATACGTTGACCGTAACGGCAACGCCGTGGATTACCAGACA
GGCCCAATTATCTGGGGCGAACCAGGCACCAACGGTCAGCACGCGTTTTATCAATTGATTCACCAGGGTACTAAA
ATGGTGCCGTGTGATTTTATCGCCCCGGCTATCACCCATAACCCGCTATCCGATCATCATCAGAAGCTGCTGTCT
AACTTCTTCGCNAA

274. ***Salmonella enterica*** **virschow (SEQ ID NO. 274) SVIR**

CGCTGTGGTCTGCCTCGGGCTGTCCATTATTCTGTCCGTCGGTTTCGACAACTTTGTCGAGCTGCTTTCCGGCGC
GCACGCGATGGACAAGCATTTCTCCACCACTCCGGCGGAGAAAAACCTACCCATTCTGCTGGCGTTGATTGGCAT
CTGGTACAACAATTTCTTCGGCGCGGAAACCGAAGCCATTCTGCCGTACGACCAGTATATGCACCGTTTCGCCGC
CTACTTCCAGCAGGGTAACATGGAATCCAACGGTAAATACGTTGACCGTAACGGCAACGCCGTGGATTACCAGAC
AGGCCCAATTATCTGGGGCGAACCAGGCACCAACGGTCAGCACGCGTTTTATCAATTGATTCACCAGGGTACTAA
AATGGTGCCGTGTGATTTTATCGCCCCGGCTATCACCCATAACCCGCTATCCGATCATCATCAGAAGCTGCTGTC
TAACTTCTTCCAA

275. ***Salmonella enterica typhimurium*** **(SEQ ID NO. 275) STPMM**

GCTGTGGTCTGCNTCGGGCTGTCCATTATTCTGTCCGTCGGTTTCGACAACTTTGTCGAGCTGCTTTCCGGCGCG
CACGCGATGGACAAGCATTTCTCCACCACTCCGGCGGAGAAAAACCTACCCATTCTGCTGGCGTTGATTGGCATC
TGGTACAACAATTTCTTCGGCGCGGAAACCGAAGCCATTCTGCCGTATGACCAGTATATGCACCGTTTCGCCGCC
TACTTCCAGCAGGGTAACATGGAATCCAACGGTAAATACGTTGACCGTAACGGCAACGCCGTGGATTACCAGACA
GGCCCAATTATCTGGGGCGAACCAGGCACCAACGGTCAGCACGCGTTTTATCAATTGATTCACCAGGGTACTAAA
ATGGTGCCGTGTGATTTTATCGCCCCGGCTATCACCCATAACCCGCTATCCGATCATCATCAGAAGCTGCTGTCT
AACTTCTTCGCNAA

276. ***Salmonella enterica paratyphi B*** **(SEQ ID NO. 276) SPTB**

CGCTGTGGTCTGCNTCGGGCTGTCCATTATTCTGTCCGTCGGTTTCGACAACTTTGTCGAGCTGCTTTCCGGCGC
GCACGCGATGGACAAGCATTTCTCCACCACTCCGGCGGAGAAAAACCTACCCATTCTGCTGGCGTTGATTGGCAT
CTGGTACAACAATTTCTTCGGCGCGGAAACCGAAGCCATTCTGCCGTATGACCAGTATATGCACCGTTTCGCCGC
CTACTTCCAGCAGGGTAACATGGAATCCAACGGTAAATACGTTGACCGTAACGGCAACGCCGTGGATTACCAGAC
AGGCCCAATTATCTGGGGCGAACCAGGCACCAACGGTCAGCACGCGTTTTATCAATTGATTCACCAGGGTACTAA
AATGGTGCCGTGTGATTTTATCGCCCCGGCTATCACCCATAACCCGCTATCCGATCATCATCAGAAGCTGCTGTC
TAACTTCTTCCAAA

277. ***Serratia liquefasciens*** **(SEQ ID NO. 277) SLIQ**

NTGTGGTCGGCGATTGGCCTGTCTATCGCCCTGTCAGTGGGTTACGAGAATTTTGAACAGTTGCTGAGCGGCGCG
CACGCGATGGACAAACACTTCGCGCAAACGCCGGCAGAGCAAAACCTGCCGGTGCTGCTGGCGTTGATCGGTATC
TGGTACAACAACTTCTTCGGTGCAGAAACCGAAGCTATCCTGCCGTACGACCAGTACATGCACCGTTTTGCCGCT

TACTTCCAGCAGGGCAACATGGAATCCAACGGTAAATATGTCGATCGCAACGGCAATCCGGTGGACTACCAGACC
GGCCCAATCATCTGGGGCGAGCCGGGCACCAACGGGCAGCACGCGTTTTACCAACTGATCCACCAGGGGACCAAA
CTGGTGCCTTGTGACTTTATCGCGCCGGCCATCAGCCATAATCCGCTGAGCGACCACCATGCAAAACTGCTGTCG
AACTTCTTCGCCAA

Figure 12. Molecular marker VII (EG10839 & EG11396 or sfrB & yigC) in Gram-negative bacteria (SEQ ID NOs 278-303).

278. Neisseria meningitidis serogroup A strain Z2491
(SEQ ID NO. 278)

ACAGAAAATCCTCGAAGACACCCTGCTGGAACAATGGCAGTGGCTCAAACCTAAAGAACCGTAAACATCCTGCGT
ACACAAATGCCGTCTGAAACGCCCCCACGCTTCAGACGGCAGACCGTAAAACCTACAACCCCAATTCCTCCCAAA
TCTCATCAATCTTAGCCGTAACCGCAGGGTCTTTTTTAATCACCCGTCCCCATTCGCGGTCGGTTTCGCCCGGCC
ACTTGTTGGTCGCATCCAAACCCATTTTGCCGCCAAGTCCGCTGACGGGGCTGGCGAAGTCGAGGTAGTCGATGG
GCGTGTTTTCCATCAAAACGGTATCGCGCACGGGGTCCATGCGCGTGGTTACCGCCCAGATGACTTCTTTCCAGT
CGCGCACATCCACATCGTCATCCACCACAATGATGAATTTGGTGTACATAAACTGGCGCAGGAACGACCAGCAGC
CCATCATCACGCGCTTGGCGTGTCCGGCGTACTGTTTTTTCATGCTCACCACCGCCATGCGGTAGGAGCAGCCTT
CGGGCGGCAGGTAAAAATCGGTGATTTCGGGGAACTGCTTTTGCAAAAGCGGTACGAACACTTCGTTCAACGCCA
CGCCCAAAACGGCGGGTTCATCGGGCGGTTTGCCTGTGTAGGTAGAGTGGTAAATCGGGTTTTCGCGCATGGTGA
TGCGTTCGACCGTAAACACGGGGAAATGGTCCTGCTCGTTGTAATAGCCCGTGTGGTCGCCGTATGGACCTTCCA
ACGCGGTTTCGTTTGGATGGATGACGCCTTCCAACACGATTTCTGCGCGGGCAGGCACTTGCAAATCGTTGCCGA
TACATTTCACCAGTTCCGTCCGCGAACCGCGCAGCAGTCCGGCAAACTGGTATTCGCTCAAGGTATCGGGAACGG
GCGTTACCGCGCCCAAAATGGTGGCAGGGTCGCAGCCGAGCACGACGGCGACGGGATACGGCGTATCGGGATTGA
GTTTGCGGAATTCCTGATAATCCAGCGCGCCGCCGCGATGCGACAGCCAGCGCATAATCAGCTTGTTTATGCCGA
TTAATTGTTGGCGGTAAATGCCGAGATTTTGGCGTTTTTTGTGCGGCCCGCGCGTGACGGTCAAGCCCCACGTTA
CCAGCGGCGCAACGTCTTCCGGCCAGCAATGCTGAATCGGAAGTTGATACAAATCAACGTCTTCGCCTTCCCATA
CGATTTCCTGACACGGCGCATTTTTCACCACGTTCGGCGCCATGCTCCAAATGTCTTTCAAGAGCGGCAGTTTGG
AAAACGCGTCTTTAATGCCTTTGGGCGGTTCGGGTTCTTTCAAATACGCCAGCGTCTGCCCGATTTCGCGCAGCT
TGGACACGCTGTCCGCGCCCATGCCCATCGCCACACGTTCGGGCGTGCCGAACAGGTTTGCCAACACGGGATAAT
CATAGCGCGTACCGTCGGGCTTAACTGGGTGTTCAAACAACAACGCCGGCCCTTCGGCGCGCAGCACGCGGTCGG
CGATTTCGGTCATTTCCAAATGCGGGGAAACGGGGTGCGCGATGCGTTTGAGTTTGCCCTGCTGCTCGAGCATGG
CGATGAAGTCGCGCAGGTCTTTGTATTTCATATTCATCCTTTTTGTCCTTTTATCCTGAGCAATCCGATTCGGAT
ACCGCCCCTATCCTTGCCTGCGCTTCGGCATATTCTATGCCGTGATAAAAGTCGCGTACCAGCGGATGTTCGCTG
CCTTGATGGAGTTGCAACAAAGGACGTTGACCATCGGGTTGGGTAACGACATTGCAATGCAAACCGAAGGTGTCG
GATTCGTAAGGGGGCAGCCGGTTGCAGATCATGCCGAAATAAACGGCGTTTTCAGGGTTG

279. Klebsiella oxytoca (SEQ ID NO. 279)

ACGACCAGACGCCCATCATGACGCGTTTCGCGTGACCGGCGTACTGCTTCTTCATCGTGACGACCGCCAGGCGAT
AGGAACAGCCTTCAGGCGGCAAATAGAAATCCACGATTTCAGGAAACTGCTTTTGCAGAATGGGGACGAACACTT
CGTTCAGCGCAACGCCCAGTACCGCCGGCTCATCCGGCGGGCGCCCGGTATAGGTCGAGTGATAGATGGCATCTT
CACGCTGAGTAATGTGGGTAACGGTAAAGACCGGGAAGTTATCCACTTCATTGTAGTAGCCAGTATGGTCGCCAT
AGGGGCCTTCCGGCGCCATTTCTCCGGCTTCAATATACCCTTCCAGCACGATCTCCGCGCTGGCGGGCACCTCAA
GATCGTTAGAGATGCACTTCACGACTTCGGTTTTGGTGCCGCGCAGTAGCCCGGCAAAAGCGTATTCGGAAAGAG
TATCCGGAACCGGAGTCACCGCCCCGAGAATGGTTGCCGGATCGGCGCCCAGCGCGACGGAGACCGGGAAACGCT
CGCCAGGACGCGCCGCGCACCACTCCTGGAAGTCCAGCGCGCCGCCGCGATGCGATAGCCAAC

280. ***Salmonella enterica subsp. enterica serovar Paratyphi A*** **(SEQ ID NO. 280)**

ATGGACGCCATGAAATATCACGATTTACGCGACTTCCTGACGCTACTTGAGCAACAGGGGGAACTAAAACGCATC
ACGCTACCTGTGGATCCTCATCTGGAAATTACGGAAATCGCTGACCGCACGCTGCGTGCCGGTGGACCGGCGTTG
CTGTTTGAAAGTCCTAAAGGTTACGCCATGCCGGTGCTGTGCAACCTTTTTGGCACGCCAAAACGCGTGGCGATG
GGCATGGGGCAGGATGATGTTTCCGCCTTACGGGAAGTGGGTAAATTATTAGCGTTTCTGAAAGAACCTGAGCCG
CCGAAAGGCTTTCGCGATCTGTTTGACAAGCTGCCGCAGTTTAAGCAAGTGCTGAATATGCCGACGAAACGGTTA
CGCGGCGCGCCTTGCCAGCAGAAAATCGCGTCTGGCGATGATGTCGATTTAACGCGTCTTCCTGTCATGACCTGT
TGGCCGGACGACGCCGCGCCGCTGATTACCTGGGGACTGACGGTAACGCGTGGCCCGCACAAAGAACGGCAAAAC
CTGGGCATTTATCGTCAGCAGTTGATAGGTAAAAATAAGCTGATTATGCGCTGGCTGTCTCACCGCGGCGGCGCG
TTGGATTTTCAGGAGTGGTTAGCCGCGCGTCCGGGTGAACGTTTCCCGGTCTCCGTCGCATTGGGCGCCGATCCG
GCGACGATACTTGGCGCCGTGACTCCTGTTCCCGATACTCTGTCGGAGTATGCCTTTGCGGGCCTGCTGCGCGGC
ACGAAAACTGAAGTGGTTAAATGCCTTTCTAACGATCTGGAAGTGCCTGCCAGCGCCGAGATTATCCTTGAAGGT
TACATTGAGCCGGGAGAGATGGCGCCGGAAGGACCGTATGGCGATCATACGGGCTATTATAATGAAGTGGATAAC
TTTCCGGTCTTTACCGTCACGCATATTACGCAGCGTGAGGATGCCATCTATCACTCCACCTATACCGGGCGTCCG
CCCGATGAGCCTGCGGTATTAGGGGTGGCGCTCAATGAAGTCTTCGTGCCTATTCTGCAAAAACAGTTTCCGGAA
ATCGTCGACTTTTATCTGCCGCCGGAAGGGTGTTCTTACCGCCTGGCGGTAGTGACGATGAAAAAGCAGTACGCT
GGTCATGCGAAACGCGTCATGATGGGCGTCTGGTCGTTTTTGCGCCAGTTTATGTATACGAAATTTGTTATCGTT
TGCGATGATGACGTTAACGCACGCGACTGGAATGATGTGATCTGGGCGATTACCACCCGTATGGACCCTGCGCGG
GATACGGTGCTGGTTGAAAATACGCCGATTGATTACCTGGATTTTGCCTCGCCGGTCTCCGGGCTGGGTTCAAAA
ATGGGGCTGGATGCCACAAACAAATGGCCGGGCGAAACCCAACGCGAGTGGGGTCGTCCTATTGTTAAAGATCCT
GAAGTTACCGCACGTATTGATGCGATTTGGGATGAGCTGGCTATCTTTAAATAA

281. ***Salmonella typhimurium LT2*** **(SEQ ID NO. 281)**

GAGGCTACAATGGACGCCATGAAATATCACGATTTACGCGACTTCCTGACGCTACTTGAGCAGCAGGGGGAACTA
AAACGCATCACGCTACCTGTGGATCCTCATCTGGAAATCACGGAAATCGCTGACCGCACGCTGCGTGCCGGTGGA
CCGGCGTTGCTGTTTGAAAATCCTAAAGGTTACGCCATGCCGGTGCTGTGCAACCTTTTTGGCACGCCAAAACGC
GTGGCGATGGGCATGGGGCAGGATGATGTTTCCGCCTTACGGGAAGTGGGTAAATTATTAGCGTTTCTTAAAGAA
CCTGAGCCGCCGAAAGGCTTTCGCGATCTGTTTGACAAGCTGCCGCAGTTTAAGCAAGTGCTGAATATGCCGACG
AAACGGTTACGCGGCGCGCCTTGCCAGCAGAAAATCGCGTCTGGCGATGATGTCGATTTAACGCGTCTTCCTGTC
ATGACCTGTTGGCCGGACGACGCCGCGCCGCTGATTACCTGGGGACTGACGGTAACGCGTGGTCCGCACAAAGAG
CGGCAAAACCTGGGCATTTATCGTCAGCAGTTGATAGGTAAAAATAAGCTGATTATGCGCTGGCTGTCTCACCGC
GGCGGCGCGCTGGATTTTCAGGAGTGGTTAGCCGCGCGTCCGGGTGAACGTTTCCCGGTCTCCGTCGCATTGGGC
GCCGATCCGGCGACGATACTTGGCGCCGTGACTCCTGTTCCCGATACTCTGTCGGAGTATGCCTTTGCGGGCCTG
CTGCGCGGCACGAAAACTGAAGTGGTTAAATGCCTTTCTAACGATCTGGAAGTGCCTGCCAGCGCCGAGATTATC
CTTGAAGGTTACATTGAGCCGGGAGAGATGGCGCCGGAAGGACCGTATGGCGATCATACGGGCTATTATAATGAA
GTGGATAGCTTTCCGGTCTTTACCGTCACGCATATTACACAGCGTGAGGATGCCATCTATCACTCCACCTATACC
GGGCGTCCGCCCGATGAGCCTGCGGTATTAGGGGTGGCGCTCAATGAAGTCTTCGTGCCTATTCTGCAAAAACAG
TTTCCGGAAATCGTCGACTTTTATCTGCCGCCGGAAGGGTGTTCTTACCGCCTGGCGGTAGTGACGATGAAAAAG

CAGTACGCTGGTCATGCGAAACGCGTCATGATGGGCGTCTGGTCGTTTTTGCGCCAGTTTATGTATACGAAATTT
GTTATCGTTTGCGATGATGACGTTAACGCACGCGACTGGAATGATGTGATCTGGGCGATTACCACCCGTATGGAC
CCTGCACGGGATACGGTGCTGGTTGAAAATACGCCGATTGATTACCTGGATTTTGCCTCGCCGGTCTCCGGGCTG
GGTTCAAAAATGGGGCTGGATGCCACAAACAAATGGCCGGGCGAAACCCAACGCGAGTGGGGTCGTCCTATTGTT
AAAGATCCTGAAGTTACCGCGCGTATTGATGCGATTTGGGATGAGCTGGCTATCTTTAAATAA

282. Escherichia coli CFT073 (SEQ ID NO. 282)

ATGGACGCCATGAAATATAACGATTTACGCGACTTCTTGACGCTGCTTGAACAGCAGGGTGAGCTAAAACGTATC
ACGCTCCCGGTGGATCCGCACCTGGAAATCACTGAAATTGCTGACCGCACTTTGCGTGCCGGTGGGCCTGCGCTG
TTGTTCGAAAACCCTAAAGGCTACTCAATGCCGGTGCTGTGCAACCTGTTCGGTACGCCAAAGCGCGTGGCGATG
GGCATGGGGCAGGAAGATGTTTCGGCGCTGCGTGAAGTTGGTAAATTATTGGCGTTTCTGAAAGAGCCGGAGCCG
CCAAAAGGTTTCCGCGACCTGTTTGATAAACTGCCGCAGTTTAAGCAAGTATTGAACATGCCGACAAAGCGACTG
CGTGGTGCACCCTGCCAACAAAAAATCGTCTCTGGCGATGACGTCGATCTCAATCGCATTCCCATTATGACCTGC
TGGCCGGAAGATGCCGCGCCGCTGATTACCTGGGGGCTCACCGTAACGCGCGGCCCGCATAAAGAGCGGCAGAAT
CTGGGCATTTATCGCCAGCAGCTAATTGGTAAAAACAAACTGATTATGCGCTGGCTGTCGCATCGCGGCGGCGCG
TTGGATTATCAGGAGTGGTGTGCGGCGCATCCGGGCGAACGTTTCCCGGTTTCTGTGGCGCTGGGTGCCGATCCT
GCCACGATTCTCGGTGCAGTCACCCCCGTTCCGGATACGCTTTCAGAGTATGCGTTTGCCGGATTGCTGCGCGGT
ACCAAGACCGAAGTGGTGAAGTGTATCTCCAATGACCTTGAAGTGCCCGCCAGTGCGGAGATTGTGCTGGAAGGG
TATATCGAACAAGGCGAAACTGCGCCGGAAGGGCCGTATGGCGACCACACCGGTTACTATAACGAAGTCGATAGT
TTTCCGGTATTTACCGTGACGCATATTACCCAGCGTGAAGATGCGATTTATCATTCCACCTATACCGGGCGTCCG
CCAGATGAACCTGCGGTACTGGGTGTAGCACTGAACGAAGTGTTCGTGCCGATTCTGCAAAAACAGTTCCCGGAA
ATTGTCGATTTTTATCTGCCGCCGGAAGGCTGTTCTTATCGTCTGGCGGTAGTGACGATCAAAAAACAGTACGCC
GGACACGCGAAGCGCGTCATGATGGGCGTCTGGTCGTTCTTACGCCAGTTTATGTACACTAAATTTGTGATCGTT
TGCGATGATGACGTCAACGCCCGCGACTGGAACGATGTGATTTGGGCGATTACCACCCGTATGGACCCGGCGCGG
GATACTGTTCTGGTAGAAAATACGCCTATTGATTATCTGGATTTTGCCTCGCCTGTCTCCGGGCTGGGTTCAAAA
ATGGGGCTGGATGCCACGAATAAATGGCCGGGTGAAACCCAGCGTGAATGGGGACGTCCCATCAAAAAAGATCCA
GATGTTGTCGCGCATATTGACGCCATTTGGGATGAACTGGCTATTTTTAACAACGGTAAAAGCGCCTGA

283. Escherichia coli K12 (SEQ ID NO. 283)

ATGGACGCCATGAAATATAACGATTTACGCGACTTCTTGACGCTGCTTGAACAGCAGGGTGAGCTAAAACGTATC
ACGCTCCCGGTGGATCCGCATCTGGAAATCACTGAAATTGCTGACCGCACTTTGCGTGCCGGTGGGCCTGCGCTG
TTGTTCGAAAACCCTAAAGGCTACTCAATGCCGGTGCTGTGCAACCTGTTCGGTACGCCAAAGCGCGTGGCGATG
GGCATGGGGCAGGAAGATGTTTCGGCGCTGCGTGAAGTTGGTAAATTATTGGCGTTTCTGAAAGAGCCGGAGCCG
CCAAAAGGTTTCCGCGACCTGTTTGATAAACTGCCGCAGTTTAAGCAAGTATTGAACATGCCGACAAAGCGGCTG
CGTGGTGCGCCCTGCCAACAAAAAATCGTCTCTGGCGATGACGTCGATCTCAATCGCATTCCCATTATGACCTGC
TGGCCGGAAGATGCCGCGCCGCTGATTACCTGGGGGCTGACAGTGACGCGCGGCCCACATAAAGAGCGGCAGAAT
CTGGGCATTTATCGCCAGCAGCTGATTGGTAAAAACAAACTGATTATGCGCTGGCTGTCGCATCGCGGCGGCGCG
CTGGATTATCAGGAGTGGTGTGCGGCGCATCCGGGCGAACGTTTCCCGGTTTCTGTGGCGCTGGGTGCCGATCCC
GCCACGATTCTCGGTGCAGTCACTCCCGTTCCGGATACGCTTTCAGAGTATGCGTTTGCCGGATTGCTACGTGGC
ACCAAGACCGAAGTGGTGAAGTGTATCTCCAATGATCTTGAAGTGCCCGCCAGTGCGGAGATTGTGCTGGAAGGG

TATATCGAACAAGGCGAAACTGCGCCGGAAGGGCCGTATGGCGACCACACCGGTTACTATAATGAAGTCGATAGT
TTCCCGGTATTTACCGTGACGCATATTACCCAGCGTGAAGATGCGATTTACCATTCCACCTATACCGGGCGTCCG
CCAGATGAGCCCGCGGTGCTGGGTGTCGCACTGAACGAAGTGTTTGTGCCGATTCTGCAAAAACAGTTCCCGGAA
ATTGTCGATTTTTACCTGCCGCCGGAAGGCTGCTCTTATCGCCTGGCGGTAGTGACAATCAAAAAACAGTACGCC
GGACACGCGAAGCGCGTCATGATGGGCGTCTGGTCGTTCTTACGCCAGTTTATGTACACTAAATTTGTGATCGTT
TGCGATGATGACGTTAACGCACGCGACTGGAACGATGTGATTTGGGCGATTACCACCCGTATGGACCCGGCGCGG
GATACTGTTCTGGTAGAAAATACGCCTATTGATTATCTGGATTTTGCCTCGCCTGTCTCCGGGCTGGGTTCAAAA
ATGGGGCTGGATGCCACGAATAAATGGCCGGGGGAAACCCAGCGTGAATGGGGACGTCCCATCAAAAAAGATCCA
GATGTTGTCGCGCATATTGACGCCATCTGGGATGAACTGGCTATTTTTAACAACGGTAAAAGCGCCTGA

284. ***Salmonella enterica subsp. enterica serovar Typhi***
(SEQ ID NO. 284)

ATGGACGCCATGAAATATCACGATTTACGCGACTTCCTGACGCTACTTGAGCAGCAGGGGGAACTAAAACGCATC
ACGCTACCTGTGGATCCTCATCTGGAAATCACGGAAATCGCTGACCGCACGCTGCGTGCCGGTGGACCGGCGTTG
CTGTTTGAAAATCCTAAAGGTTACGCCATGCCGGTGCTGTGCAACCTTTTTGGCACGCCAAAACGCGTGGCGATG
GGCATGGGGCAGGATGATGTTTCCGCCTTACGGGAAGTGGGTAAATTATTAGCGTTTCTGAAAGAACCTGAGCCG
CCGAAAGGCTTTCGCGATCTGTTTGACAAGCTGCCGCAGTTTAAGCAAGTGCTGAATATGCCGACGAAACGGTTA
CGCGGCGCGCCTTGCCAGCAGAAAATCGCGTCTGGCGATGATGTCGATTTAACGCGTCTTCCTGTCATGACCTGT
TGGCCGGACGACGCCGCGCCGCTGATTACCTGGGGACTGACGGTAACGCGTGGCCCGCACAAAGAACGGCAAAAC
CTGGGCATTTATCGTCAGCAGTTGATAGGTAAAAATAAGCTGATTATGCGCTGGCTGTCTCACCGCGGCGGCGCG
TTGGATTTTCAGGAGTGGTTAGCCGCGCGTCCGGGTGAACGTTTCCCGGTCTCCGTCGCATTGGGCGCCGATCCG
GCGACGATACTTGGCGCCGTGACTCCTGTTCCCGATACTCTGTCGGAGTATGCCTTTGCGGGCCTGCTGCGCGGC
ACGAAAACTGAAGTGGTTAAATGCCTTTCTAACGATCTGGAAGTGCCTGCCAGCGCCGAGATTATCCTTGAAGGT
TACATTGAGCCGGGAGAGATGGCGCCGGAAGGACCGTATGGCGATCATACGGGCTATTATAATGAAGTGGATAAC
TTTCCGGTCTTTACCGTCACGCATATTACGCAGCGTGAGGATGCCATCTATCACTCCACCTATACCGGGCGTCCG
CCCGATGAGCCTGCGGTATTAGGGGTGGCGCTCAATGAAGTCTTCGTGCCTATTCTGCAAAAACAGTTTCCGGAA
ATCGTCGACTTTTATCTGCCGCCGGAAGGGTGTTCTTACCGCCTGGCGGTAGTGACGATGAAAAAGCAGTACGCT
GGTCATGCGAAACGCGTCATGATGGGTGTCTGGTCGTTTTTGCGCCAGTTTATGTATACGAAATTTGTTATCGTT
TGCGATGATGACGTTAACGCACGCGACTGGAATGATGTGATCTGGGCGATTACCACCCGTATGGACCCTGCGCGG
GATACGGTGCTGGTTGAAAATACGCCGATTGACTACCTGGATTTTGCCTCGCCGGTCTCCGGGCTGGGTTCAAAA
ATGGGGCTGGATGCCACAAACAAATGGCCGGGCGAAACCCAACGCGAGTGGGGTCGTCCTATTGTTAAAGATCCT
GAAGTTACCGCGCGTATTGATGCGATTTGGGATGAGCTGGCTATCTTTAAATAA

285. ***Escherichia coli O157:H7 EDL933*** **(SEQ ID NO. 285)**

ATGGACGCCATGAAATATAACGATTTACGCGACTTCTTGACGTTGCTTGAACAGCAGGGTGAGCTAAAACGTATC
ACGCTCCCGGTGGACCCGCATCTGGAAATCACTGAAATTGCTGACCGCACGCTGCGTGCTGGTGGGCCTGCGCTG
TTGTTTGAAAACCCTAAAGGGTACTCAATGCCGGTGCTGTGCAACTTGTTCGGTACGCCAAAGCGCGTAGCGATG
GGTATGGGCCAGGAAGATGTTTCAGCACTGCGTGAAGTCGGTAAATTATTAGCATTTCTGAAAGAACCAGAGCCG
CCAAAAGGTTTTCGCGATCTGTTTGATAAGCTGCCGCAGTTTAAGCAGGTGTTAAACATGCCGACAAAGCGACTG
CGCGGTGCACCCTGCCAACAAAAAATCGTCTCTGGCGATGACGTCGATCTCAACCGTATTCCCATTATGACCTGT

TGGCCGGAAGATGCCGCGCCGCTGATTACATGGGGGCTAACCGTTACACGTGGCCCTCATAAAGAGCGACAGAAT
CTGGGCATTTATCGCCAGCAACTGATTGGTAAAAACAAGCTGATTATGCGTTGGCTGTCGCATCGCGGCGGCGCG
CTGGATTATCAGGAGTGGTGTGCGGCGCATCCAGGTGAACGTTTCCCGATCTCTGTGGCGTTGGGCGCTGATCCG
GCAACCATTCTCGGTGCAGTCACACCAGTACCAGATACTTTGTCGGAATACGCCTTTGCCGGATTGCTACGTGGC
ACCAAAACCGAAGTAGTGAAGTGTATTTCCAATGATCTCGAAGTGCCCGCCAGTGCGGAGATTGTGCTGGAAGGG
TATATCGAACAAGGCGAAATGGCGCCAGAAGGACCGTATGGTGACCACACTGGTTACTATAACGAAGTCGATAGT
TTCCCGGTATTTACCGTGACGCATATTACCCAGCGTGAAGATGCGATTTACCATTCCACCTATACCGGGCGTCCG
CCAGATGAACCCGCGGTACTGGGAGTGGCGTTGAACGAAGTATTTGTTCCCATTCTGCAAAAGCAGTTCCCGGAA
ATTGTCGATTTTTACCTGCCGCCGGAAGGCTGCTCTTATCGCCTGGCGGTAGTGACAATCAAAAAACAGTACGCC
GGACACGCGAAGCGCGTCATGATGGGCGTCTGGTCGTTCTTACGCCAGTTTATGTACACTAAATTTGTGATCGTT
TGCGATGATGACGTTAACGCACGCGACTGGAACGATGTGATTTGGGCGATTACCACCCGTATGGACCCAGCGCGG
GATACTGTTCTGGTAGAAAATACGCCTATTGATTATCTGGATTTTGCCTCGCCTGTCTCCGGGCTGGGTTCAAAA
ATGGGGCTGGATGCCACGAATAAATGGCCGGGGGAAACCCAGCGTGAATGGGGACGTCCCATCAAAAAAGATCCA
GATGTTGTCGCACATATTGACGCCATCTGGGATGAACTGGCTATTTTTAACAACGGTAAAAGCGCCTGA

286. Shigella flexneri 2a str. 301 (SEQ ID NO. 286)

ATGGACGCCATGAAATATAACGATTTACGCGACTTCCTGACGCTGCTTGAACAGCAGGGTGAGCTAAAACGTATC
ACGCTCCCGGTGGATCCGCATCTGGAAATCACTGAAATTGCTGACCGCACTCTGCGTGCTGGTGGGCCTGCGCTG
TTGTTCGAAAACCCTAAAGGCTACTCAATGCCGGTGCTGTGCAACCTGTTCGGTACGCCAAAGCGCGTGGCGATG
GGCATGGGGCAGGAAGATGTTTCGACGCTGCGTGAAGTTGGTAAATTATTGGCGTTTCTGAAAGAGCCGGAGCCG
CCAAAAGGTTTCCGCGACCTGTTTGATAAACTGCCGCAGTTTAAGCAGGTGTTAAACATGCCGACAAAGCGACTG
CGTGGTGCGCCCTGCCAACAAAAAATCGTCTCTGGCGATGACGTCGATCTCAATCGCATTCCCATTATGACCTGC
TGGCCGGAAGATGCCGCGCCGCTGATTACCTGGGGGCTGACCGTAACGCGCGGCCCGCATAAAGAGCGGCAGAAT
CTGGGCATTTATCGCCAGCAGCTGATTGGTAAAAACAAACTGATTATGCGCTGGCTGTCGCATCGCGGCGGCGCG
CTGGATTATCAGGAGTGGTGTGCGGCGCATCCGGGCGAACGTTTCCCGGTTTCTGTGGCGCTGGGTGCCGATCCT
GCCACGATTCTCGGTGCAGTCACCCCCGTTCCGGATACGCTTTCAGAGTATGCGTTTGCCGGATTGCTACGCGGC
ACCAAAACCGAAGTAGTAAAGTGTATTTCCAATGACCTCGAAGTGCCAGCCAGTGCCGAAATCGTCCTGGAAGGG
TATATCGATCCTGGTGAGATGGCGCCGGAAGGGCCGTATGGTGACCACACAGGTTACTATAATGAAGTCGATAAT
TTCCCGGTGTTTACCGTGACGCATATTACCCAGCGTGAAGATGCGATTTACCATTCCACCTATACCGGGCGTCCG
CCAGATGAGCCCGCGGTACTGGGCGTGGCGTTGAACGAAGTGTTTGTACCGATTCTGCAAAAACAGTTCCCGGAA
ATTGTCGATTTTTACCTGCCGCCGGAAGGCTGTTCTTATCGTCTGGCGGTAGTGACGATCAAAAAACAGTACGCC
GGACACGCGAAGCGCGTCATGATGGGCGTCTGGTCGTTCTTACGCCAGTTTATGTACACTAAATTTGTGATCGTT
TGCGATGATGACGTCAACGCACGCGACTGGAACGATGTGATTTGGGCGATTACCACCCGTATGGACCCGGCGCGG
GATACTGTTCTGGTAGAAAATACGCCTATTGATTATCTGGATTTTGCCTCGCCTGTCTCTGGGCTGGGTTCAAAA
ATGGGGCTGGATGCCACGAATAAATGGCCGGGGGAAACCCAGCGTGAATGGGGACGTCCCATCAAAAAAGATCCA
GATGTTGTCGCGCATATTGACGCCATCTGGGATGAACTGGCTATTTTTAACAACGGTAAAAGCGCCTGA

287. Pseudomonas aeruginosa PAO1 (SEQ ID NO. 287)

ATGACGTTCAAGGATCTCCGCGATTTCATCGCCCAGCTGGAGCAGCGCGGTGCGTTGAAGCGCATCCAGGTGCCG
ATTTCCCCCGTGCTCGAGATGACCGAGGTGTGCGACCGCACGTTGCGCGCCAAGGGCCCGGCATTGCTGTTCGAA

AAGCCGACCGGCTTCGACATGCCGGTGCTCGGCAACCTGTTCGGTACGCCGGAGCGCGTGGCGCTGGGCATGGGC
GCCGAGGACGTCGGCGCACTGCGCGAGATCGGCAAGCTGCTGGCGCAACTCAAGGAGCCCGAGCCGCCGAAGGGC
CTCAAGGACGCCTGGGCCAAGCTGCCGATGTACAGGAAGGTCCTGTCCATGGCGCCGAAGGTGCTCAAGGACGCC
CCCTGCCAGGAAGTGGTCGAGGAGGGCGAGGACGTCGACCTCGGCCGGCTGCCGGTCCAGACCTGCTGGCCGGGC
GATGTCGGGCCGCTGATCACCTGGGGCCTGACCGTTACCCGCGGGCCGAACAAGGAACGGCAGAACCTGGGCATC
TACCGCCAGCAGGTGATCGGCCGCAACAAGGTGATCATGCGCTGGCTCAGCCATCGCGGCGGCGCACTGGACTAC
CGCGAGTGGTGCCAGAAGCATCCGGGCCAGCCCTATCCGGTAGCCGTGGCGCTGGGCGCCGATCCGGCGACCATC
CTCGGTGCGGTGACGCCGGTGCCGGACACCCTTTCCGAATACGCTTTCGCCGGCCTGTTGCGCGGGCATCGTACC
GAGCTGGTCAAGTGTCGCGGGAGCGACTTGCAGGTGCCGGCCAGCGCCGAGATCGTCCTCGAAGGGGTGATCCAC
CCCGGCGAGATGGCCGACGAAGGCCCCTATGGCGATCACACCGGCTACTACAACGAGGTCGATCGCTTCCCGGTG
TTCACCGTCGAGCGCGTCACCCGCCGGCAGAAACCGATCTACCACAGCACCTACACCGGGCGTCCGCCGGACGAG
CCGGCGATCCTCGGGGTGGCGCTGAACGAAGTGTTCGTGCCGATCCTGCAGAAGCAGTTCCCGGAAATCGTCGAT
TTCTACCTGCCGCCGGAAGGTTGTTCCTACCGGATGGCGGTGGTGACCATGAAGAAGCAGTACCCAGGGCACGCC
AAGCGCGTGATGCTCGGGGTCTGGTCGTTCCTGCGGCAGTTCATGTACACCAAGTTCGTCATCGTCACCGACGAT
GACATCGATGCGCGCGACTGGAACGATGTGATCTGGGCCATCACCACGCGGATGGACCCCAAGCGCGACACGGTG
ATGATCGACAACACGCCCATCGACTACCTCGACTTCGCCTCGCCGGTTTCCGGCCTCGGCTCGAAGATGGGGCTT
GATGCCACCCACAAGTGGCCGGGCGAGACCAGCCGCGAATGGGGGCGCGCCATCGTCAAGGACGAAGCGGTGACA
CGGCGCATCGACGCCCTCTGGTCGAGCCTCGGGATCGACTGA

288. Pseudomonas syringae pv. tomato str. DC3000

(SEQ ID NO. 288)

ATGAAATTCAAAGATCTAAGGGATTTCGTGCAGCAGTTGGAGCAGCGCGGAGAGTTGAAACGCATTCAGATGCCG
ATCTCGCCTGTGCTGGAAATGACTGAAATCTGTGACCGTACCTTGCGCGCCAAAGGCCCGGCCCTGCTGTTTGAA
AACCCGGTTGGCTTTGATATTCCGGTGCTGGGCAACCTGTTCGGCACGCCGGAGCGCGTGGCCATGGGCATGGGC
GCGGAAGCCGTCACCGAGCTGCGCGAAATCGGCAAGTTGCTTGCGTTTCTCAAGGAGCCCGAGCCGCCCAAAGGC
CTGAAAGATGCCTGGTCCAAGCTGCCCATCTTCCGCAAAGTCATCGCCATGGCGCCCAAGGTCGTCAAGGATGCA
CCCTGCCAGGAGATCGTCATCGAGGGTGATGACGTCGATCTCGGCATGTTGCCGGTGCAGACCTGCTGGCCGGGC
GATGTCGCGCCGCTGATCACCTGGGGCCTGACCGTGACCAAAGGCCCGAACAAGGAGCGGCAGAACCTCGGTATT
TATCGCCAGCAGGTCATCGGCCGCAACAAGATCATCATGCGCTGGCTCAGCCATCGCGGTGGCGCGCTTGACTTC
CGCGACTGGTGCGTCAAGCATCCTGGCGAGCCTTATCCGGTGGCCGTCGCACTGGGCGCGGACCCGGCGACCATT
CTCGGTGCCGTGACGCCGGTGCCCGACAGCCTGTCCGAATACGCCTTCGCCGGGCTACTGCGTGGCTCGCGCACC
GAGCTGATCAAGTGCCGTGGCAGCAACCTGCAAGTGCCAGCCAGTGCCGAAATCGTGCTTGAGGGCGTGATTCAT
CCGGGCGAGATGGCCAACGAAGGCCCCTACGGCGATCACACCGGTTATTACAACGAAGTCGACAGCTTTCCGGTG
CTCACCGTCGAGCGCATCACCCACCGCATCAAGCCGATCTACCACAGCACCTACACCGGGCGTCCACCGGACGAG
CCGGCTATCCTGGGTGTGGCGCTGAACGAAGTGTTCGTGCCGATTCTGCAGAAGCAGTTTCCGGAAATCGTCGAT
TTCTACCTGCCGCCCGAGGGGTGCTCTTACCGCATGGCGGTGGTGACTATCAAGAAACAGTACCCCGGCCATGCC
AAGCGCGTGATGCTGGGCGTCTGGTCGTTCCTGCGCCAGTTTATGTACACCAAATTTGTGATCGTCACCGATGAC
GACATCAATGCGCGTGACTGGAATGACGTGATCTGGGCCATCACCACCCGCATGGACCCCAAGCGCGACACGGTC
ATGATCGACAACACGCCCATCGATTACCTCGATTTTGCCTCTCCGGTGTCTGGATTGGGATCAAAAATGGGCCTG

GATGCCACTAACAAATGGCCAGGGGAAACCACCCGCGAATGGGGCAGGGCGATCGTCAAGGACGAAGCCACCACG
CGCCGGGTGGACGAGATCTGGACTCAGTTGGGAATAGACTGA

289. Yersinia pseudotuberculosis IP 32953 (SEQ ID NO. 289)

ATGATCAGCATGAAATACCGTGACTTACGTGACTTCCTCTCATTACTGGAACAGAGGGGGGAACTTAAACGCATT
AGCCAGCCCATTGATCCTTATTTGGAAATGACAGAAATTGCCGATCGCACGTTACGTGCTGGTGGGCCTGCGTTA
CTTTTTGAGAACCCTAAAGGTTACAGCATGCCCGTGTTGTGTAATCTGTTTGGCACCGCTAAGCGAGTCGCCATG
GGGATGGGGCAAGAAGATGTCAGCGCCCTGCGAGATGTTGGTAAATTATTGGCCTTCCTGAAAGAACCCGATCCC
CCAAAAGGTTTCCGTGACTTATTTGATAAGCTGCCAAAATTTAAGCAGGTATTGAATATGCCAACGAAACGCTTG
AACTCGGCCCCGTGTCAGGAGCAAGTTTGGCAAGGTGAGGATGTTGATTTAAGTCGCATCCCTGTGATGCACTGC
TGGCCAGAAGATGCCGCACCACTAGTCTCTTGGGGGTTGACTATTACACGTGGTCCCCACAAAGAACGGCAGAAT
CTAGGCATCTATCGCCAGCAGGTATTGGGTAAAAACAAATTAATTATGCGTTGGCTATCGCATCGTGGTGGTGCG
CTGGATTATCAGGAGTGGTGTGAGGCACACCCTGGTGAACGTTTTCCGGTCGCTGTCGCCTTGGGAGCAGACCCT
GCTACGATCTTAGCCGCAGTGACCCCGGTACCAGACACGCTGTCTGAATATGCCTTTGCCGGCTTGTTACGCGGC
CATAAAACGGAAGTGGTGAAGTGTCTTTCCAATGACCTTGAAGTTCCTGCAAGTGCAGAAATTGTATTGGAAGGA
TATATCGAACAAGGTGATATGGCTCCGGAAGGTCCTTATGGTGATCATACGGGCTATTACAATGAAATAGATAAT
TTCCCCGTGTTTACCGTCACGCATATTACACAGCGCCAAGACGCAATTTATCATTCAACCTATACGGGCCGACCA
CCGGATGAACCTGCGGTAATGGGGGTGGCACTGAACGAAGTCTTTGTACCTATTTTGCAAAAGCAATTCCCGGAA
ATTGTTGATTTCTACTTGCCACCAGAAGGGTGCTCATACCGGTTGGCGGTGGTAACCATCAAGAAACAATATGCA
GGCCATGCCAAACGCGTGATGATGGGAGTATGGTCGTTTTTACGCCAGTTTATGTATACCAAGTTTGTTATTGTT
TGTGATGACGATATTAATGCTCGTGATTGGAATGATGTAATTTGGGCGATCACCACCCGGATGGACCCATCCCGC
GATACGGTGTTAATTGAAAATACACCGATAGATTATTTGGATTTCGCCTCACCGGTTTCCGGTTTGGGATCGAAA
ATGGGGCTGGATGCCACCAACAAATGGCCAGCAGAGACTCCGCGTGAATGGGGGCGTCCAATTAAGATGGACGAA
GACGTCCGTGCCCGTATTGATGCTCTGTGGGATGAGCTGGCCATTTTCAGTGACAAAGACGCGAAACGCTAA

290. Neisseria meningitidis serogroup B strain MC58
SEQ ID NO. 290)

ATGAATATGAAATACAAAGACCTGCGCGACTTCATCGCCATGCTCGAGCAGCAGGGCAAACTCAAGCGCGTCGCA
CACCCCATTTCCCCGTATTTGGAAATGACCGAAATCGCCGACCGCGTGCTGCGTGCCGAAGGGCCGGCGTTGCTG
TTTGAAAACCCGATTAAGCCCGACGGTACGCGCTACGGTTATCCCGTGTTGGCAAACCTGTTCGGCACGCCCGAA
CGTGTGGCGATGGGCATGGGCGCGGACAGCGTGTCCAAGCTGCGTGAAATTGGGCAGACGCTGGCGTATTTGAAA
GAACCCGAACCGCCCAAAGGCATCAAAGATGCGTTTTCCAAACTGCCGCTGCTGAAAGACATTTGGAGCATGGCG
CCGAACGTGGTGAAAAACGCGCCGTGTCAGGAAATCGTGTGGGAAGGCGAAGACGTTGATTTGTATCAACTTCCG
ATTCAGCATTGCTGGCCGGAAGACGTTGCGCCGCTGGTAACGTGGGGCTTGACCGTCACGCGCGGGCCGCACAAA
AAACGCCAAAATCTCGGCATTTACCGCCAACAACTCATCGGCAAAAACAAGCTGATTATGCGTTGGCTGTCGCAT
CGCGGCGGCGCGTTGGATTATCAGGAGTTCCGCAAACTCAATCCCGATACGCCGTATCCCGTCGCCGTCGTACTC
GGCTGCGACCCCGCCACCATTTTGGGCGCGGTAACGCCTGTTCCCGATACCTTGAGCGAATACCAGTTTGCCGGA
CTGCTGCGCGGTTCGCGGACGGAGCTGGTGAAATGTATCGGCAACGATTTGCAAGTGCCTGCCCGCGCAGAAATC
GTGTTGGAAGGCGTCATCCATCCGAACGAAACCGCGTTGGAAGGCCCGTACGGCGACCACACCGGCTATTACAAC
GAGCAGGATTATTTCCCTGTGTTTACGGTCGAACGCATCACCATGCGCGAAAACCCGATTTACCATTCGACCTAC

ACGGGCAAACCGCCCGATGAACCCGCCGTTTTGGGCGTGGCGTTGAACGAAGTGTTCGTACCGCTTTTGCAAAAG
CAGTTCCCCGAAATCACCGATTTCTACCTGCCGCCCGAAGGCTGCTCCTACCGCATGGCGGTGGTGAGCATGAAA
AAACAGTACGCCGGACACGCCAAGCGCGTGATGATGGGCTGCTGGTCGTTCCTGCGCCAGTTTATGTATACCAAA
TTCATCATCGTGGTGGATGACGATGTGAACGTGCGCGACTGGAAAGAAGTCATCTGGGCGGTCACCACGCGCATG
GACCCCGTGCGCGACACTGTTTTGGTAGAAAACACGCCCATCGATTATCTCGACTTCGCCAGCCCCGTCAGCGGA
CTCGGCGGCAAAATGGGTTTGGATGCGACCAACAAATGGCCGGGAGAAACCGACCGCGAATGGGGACGCGTCATC
AAAAAAGACCCTGCGGTTACGGCTAAGATTGATGGGATTTGGGAGGAATTGGGGTTGTAG

291. Neisseria gonorrhoeae FA 1090 (SEQ ID NO. 291)

ATGAAATACAAAGACCTGCGCGACTTCATCGCTATGCTCGAGCAGCAGGGCAAGCTCAAGCGCGTCGCCCACCCC
GTTTCCCCGCATTTGGAAATGACCGAAATTGCCGACCGCGTGTTGCGCGCCGAAGGGCCGGCGTTGTTGTTTGAA
AACCCGGTTAAGCCCGACGGTACGCGCTATGATTATCCCGTGTTGGCGAACCTGTTCGGCACCCCCGAACGTGTG
GCGATGGGCATGGGCGCGGACAGCGTGTCCAAGCTGCGCGAAATCGGGCAGACGCTGGCGTATTTGAAAGAACCC
GAACCGCCCAAAGGCATCAAAGACGCGTTTTCCAAACTGCCGCTGTTGAAAGATATTTGGAGCATGGCGCCGAAC
GTGGTGAAAAACGCGCCGTGTCAGGAAATCGTGTGGGAAGGAGAAGACGTTGATTTGTATCAGCTTCCGATTCAA
CATTGCTGGCCGGAAGACGTTGCGCCGCTGGTAACGTGGGGCTTGACCGTCACGCGCGGGCCGCACAAAAAACGC
CAAAATCTCGGCATTTACCGTCAACAACTCATCGGCAAAAACAAGCTGGTTATGCGCTGGCTGTCGCATCGCGGC
GGCGCGTTGGATTATCAGGAATTCCGCAAACTCAATCCCGATACGCCGTATCCCGTCGCCGTCGTACTCGGTTGC
GACCCCTCCACCATTTTGGGCGCGGTAACGCCCGTTCCCGATACTTTGAGCGAATACCAGTTTGCCGGACTGCTG
CGCGGTTCGCGGACGGAGCTGGTGAAATGTATCGGCAGCGATTTGCAAGTGCCTGCCCGTGCTGAAATTGTATTG
GAAGGCGTGATTCATCCAAACGAAACCGCGTTGGAAGGCCCATACGGCGACCACACGGGCTATTACAACGAGCAG
GGCCATTTCCCTGTGTTTACGGTCGAACGCATCACCATGCGCGAAAACCCGATTTACCACTCTACCTACACAGGC
AAACCGCCCGACGAACCTGCCGTTTTGGGCGTGGCGTTGAACGAAGTGTTCGTACCGCTTTTGCAAAAGCAGTTC
TCCGAAATCACCGATTTCTACCTGCCGCCCGAAGGCTGTTCCTACCGCATGGCGGTGGTCAGCATGAAAAAACAG
TACGCCGGACACGCCAAGCGCGTGATGACGGGCTGCTGGTCGTTCCTGCGCCAGTTTATGTACACCAAATTCATC
ATCGTGGTGGATGACGATGTAAACGTGCGCGACTGGAAAGAAGTCATCTGGGCGGTAACCACGCGCATGGACCCC
GTCCGCGACACCGTTTTGGTGGAAAACACGCCCATCGACTACCTCGACTTCGCCAGCCCCGTCAGCGGACTCGGC
GGCAAAATGGGTTTGGATGCGACCAGCAAATGGCCGGGAGAAACCGACCGCGAATGGGGACGGGTAATCAAAAAA
GACCCTGCGGTTACGGTTAAAATTGATGGGATTTGGGGGAAATTGGGGTTGTAG

292. Yersinia pestis CO92 (SEQ ID NO. 292)

ATGATCAGCATGAAATACCGTGACTTACGTGACTTCCTCTCATTACTGGAACAGAGGGGGGAACTTAAACGCATT
AGCCAGCCCATTGATCCTTATTTGGAAATGACAGAAATTGCCGATCGCACGTTACGTGCTGGTGGGCCTGCGTTA
CTTTTTGAGAACCCTAAAGGTTACAGCATGCCCGTGTTGTGTAATCTGTTTGGCACCGCTAAGCGAGTCGCCATG
GGGATGGGGCAAGAAGATGTCAGCGCCCTGCGAGATGTTGGTAAATTATTGGCCTTCCTGAAAGAACCCGATCCC
CCAAAAGGTTTCCGTGACTTATTTGATAAGCTGCCAAAATTTAAGCAGGTATTGAATATGCCAACGAAACGCTTG
AACTCGGCCCCGTGTCAGGAGCAAGTTTGGCAAGGTGAGGATGTTGATTTAAGTCGCATCCCTGTGATGCACTGC
TGGCCAGAAGATGCCGCACCACTAGTCTCTTGGGGGTTGACTATTACACGTGGTCCCCACAAAGAACGGCAGAAT
CTAGGCATCTATCGCCAGCAGGTATTGGGTAAAAACAAATTAATTATGCGTTGGCTATCGCATCGTGGTGGTGCG
CTGGATTATCAGGAGTGGTGTGAGGCACACCCTGGTGAACGTTTTCCGGTCGCTGTCGCCTTGGGAGCAGACCCT

GCTACGATCTTAGCCGCAGTGACCCCGGTACCAGACACGCTGTCTGAATATGCCTTTGCCGGCTTGTTACGCGGC
CATAAAACGGAAGTGGTGAAGTGTCTTTCCAATGACCTTGAAGTTCCTGCAAGTGCAGAAATTGTATTGGAAGGA
TATATCGAACAAGGTGATATGGCTCCGGAAGGTCCTTATGGTGATCATACGGGCTATTACAATGAAATAGATAAT
TTCCCCGTGTTTACCGTCACGCATATTACACAGCGCCAAGACGCAATTTATCATTCAACCTATACGGGCCGACCA
CCGGATGAACCTGCGGTAATGGGGGTGGCACTGAACGAAGTCTTTGTACCTATTTTGCAAAAGCAATTCCCGGAA
ATTGTTGATTTCTACTTGCCACCAGAAGGGTGCTCATACCGGTTGGCGGTGGTAACCATCAAGAAACAATATGCA
GGCCATGCCAAACGCGTGATGATGGGAATATGGTCGTTTTTACGCCAGTTTATGTATACCAAGTTTGTTATTGTT
TGTGATGACGATATTAATGCTCGTGATTGGAATGATGTAATTTGGGCGATCACCACCCGGATGGACCCATCCCGC
GATACGGTGTTAATTGAAAATACACCGATAGATTATTTGGATTTCGCCTCACCGGTTTCCGGTTTGGGATCGAAA
ATGGGGCTGGATGCCACCAACAAATGGCCAGCAGAGACTCCGCGTGAATGGGGGCGTCCAATTAAGATGGACGAA
GACGTCCGTGCCCGTATTGATGCTCTGTGGGATGAGCTGGCCATTTTCAGTGACAAAGACGCGAAACGCTAA

293. ***Pseudomonas putida KT2440*** **(SEQ ID NO. 293)**

TTGATTGGGGCCGCCTTGCGGCCCTTCGCGGGCAAGCCCGCTCCTGCACAGGTCATTGCGGCCCTTGTAGGAGCG
GGCTTCCGCGAAGGGATGCAAAGCGGCCCCAATGCATTTTCACCCCCAAACAAGGCCCGAACGGCGCTACACTCT
GCACCCCGACCGATACGGCCAACACGAGGCTCCTGCATGCAGTATCGCGACTTGCGCGACTTCATTCGTGGCCTG
GAACAGCGCGGCGAGCTCAAGCGCATCCAGGTACCGATCTCCCCCGTCCTGGAAATGACCGAGGTCTGCGACCGC
ACCCTGCGCGCCAAGGGCCCGGCATTGTTGTTCGAAAAGCCCACCGGCTTCGACATCCCAGTGCTGGGCAACCTG
TTCGGTACCCCGGAGCGGGTGGCCATGGGCATGGGCGCCGAGTCGGTCAGCGAACTGCGGGAAATCGGCAAGCTG
CTGGCCTTCCTCAAGGAGCCTGAGCCGCCCAAGGGCCTGAAGGACGCCTGGTCGAAGCTGCCGATCTTCAAGAAG
GTCGTGTCGATGGCGCCAAAAGTGGTCAAGGACGCGGTGTGCCAGGAAGTGGTGGTCGAGGGTGACGATGTCGAC
CTTGGCACGCTGCCGATTCAGCACTGCTGGCCTGGCGACGTGGCGCCGCTGATTACCTGGGGCCTCACCGTGACC
CGTGGCCCGAACAAGGACCGCCAGAACCTGGGCATCTACCGCCAGCAGGTGATCGGCCGCAACAAGGTGATCATG
CGCTGGCTCAGCCATCGTGGCGGCGCCCTCGATTACCGAGAGTGGTGCGAGAAGAACCCCGGCCAGCCGTTTCCG
GTCGCCGTGGCCCTGGGCGCTGACCCAGCGACCATTCTCGGCGCGGTGACCCCGGTCCCGGACACCCTTTCCGAG
TACGCCTTCGCCGGCCTGCTGCGAGGCAATCGCACCGAGCTGGTCAAGTGCCGTGGCAGCAACCTGCAGGTACCG
GCAACCGCCGAGATCATTCTGGAAGGGGTGATCCACCCAGGCGAAATGGCCCCGGAAGGCCCTTACGGCGATCAC
ACGGGCTACTACAACGAAGTGGACAGTTTCCCGGTGTTCACCGTTGAGCGCATCACCCACCGGCAAAAACCGATC
TACCACAGCACCTACACCGGCCGGCCGCCAGATGAGCCGGCCATTCTCGGCGTGGCGCTGAACGAAGTGTTCGTG
CCGATCCTGCAGAAGCAGTTCCCGGAAATCACCGACTTCTACCTGCCGCCGGAAGGCTGCTCGTACCGCATGGCG
GTGGTGACCATGAAGAAACAGTACCCAGGCCACGCCAAGCGCGTAATGCTGGGTGTGTGGTCGTTCCTGCGACAG
TTCATGTACACCAAGTTCGTTATTGTCACCGATGACGATATCAACGCTCGTGACTGGAACGATGTGATCTGGGCC
ATTACCACGCGCATGGACCCCAAGCGTGATACGGTAATGATTGACAATACCCCGATCGACTACCTGGACTTTGCG
TCACCGGTGTCGGGGCTGGGTTCGAAGATGGGCCTGGACGCTACGCACAAGTGGCCGGGCGAGACTACACGCGAA
TGGGGCCGGGTCATCGTCAAGGATGAGGCCGTCACCCGCCGTATCGATGAGCTGTGGGATCAGTTGGGAATAGAT
TGA

294. ***Serratia marcescens ATCC 13880*** **(SEQ ID NO. 294)**

CAGACGCCCATCATCACGCGTTTCGCATGGCCGGCGTACTGTTTTTTCATGGTCACTACCGCCAGGCGGTAAGAG
CACCCTTCCGGCGGCAGATAGAAATCGACGATTTCCGGGAACTGCTTTTGCAGGATCGGTACGAACACTTCATTC

AGCGCCACGCCCAGGATCGCCGGCTCATCCGGCGGGCGGCCGGTGTAGGTCGAGTGGTAGATCGCGTTGCGGCGC
TGGGTGATGTGAGTAACGGTGAACACCGGGAACTGGTCGATTTCATTGTAGTAACCGGTGTGGTCGCCGTAGGGG
CCTTCCGGCGCCATTTCACCCGGCTCGATATAGCCTTCAAGCACGATTTCGGCGCTGGCGGGCACTTCCAGATCG
TTGGAAAGGCACTTGACCACTTCGGTTTTGTTGCCGCGCAGCAACCCGGCAAAGGCGTATTCGGACAAGGTATCA
GGCACCGGCGTGACCGCACCGAGGATGGTAGCAGGATCGGCGCCCAGCGCCACCGCAACCGGGAAACGCTCGCCC
GGGTGCGCCTGGCACCACTCCTGATAATCCAGCGCGCCGCCGCGATGCGACAGCCAACGCAT

295. ***Burkholderia mallei ATCC 23344*** **(SEQ ID NO. 295)**

ATGAAATACAGAGATTTACGCGATTTCATCCATGGCCTCGAGCAGCGCGGCGAGTTGCGGCGCGTCACCCAGCCC
GTATCGCCCGTCCTCGAAATGACCGAACTCTGCGACCGCGTGCTGCGCGCGGGCGGCCCCGCACTCCTGTTCGAC
GCGCCGGCCGGCCACCGGTTTCCGGTGCTCGGCAATCTGTTCGGCACGCCGCGGCGCGTCGCGCTCGGCATGGGC
GTCGACGCCGACGACGAAGCGGCGCTCGCGTCGCTGCGCGACATCGGCCGCCTGCTGTCCGCGCTCAAGGAGCCG
GACCCGCCGAAGCGCCTGAAAGACGCGGGCAAGTTGCTGTCGCTCGCGAAGGCCGTGTGGGACATGGGCCCGAAG
ACGGTCTCCGCGCCGCCGTGCCAGGAGATCGTCTGGGAAGGCGACGACGTCGATCTGCACAAGCTGCCGATCCAG
ACCTGCTGGCCGGGCGACGCCGGGCCGCTGCTCACGTGGGGCCTGACCGTCACGCGCGGGCCGAACAAGACGCGC
CAGAATCTGGGCATCTACCGGCAGCAACTGATCGGACGCAACAAACTGATCATGCGCTGGCTCGCGCATCGCGGC
GGCGCGCTCGATTTCCGCGAATTCGCGCTGAAGCATCCGGGCCAGCCCTATCCCGTCGCCGTCGTGCTCGGCGCC
GATCCGGCGACGATGCTCGGGGCCGTCACGCCCGTGCCCGATTCGCTGTCCGAATACCAGTTCGCGGGCCTGCTG
CGCGGCGCGCGCACCGAGCTCGCGAAATGCGTGACGCCCGGCGTCGACGCGCTGCAGGTGCCGGCGCGCGCGGAA
ATCGTGCTCGAAGGCTTCATCCACCCGCAGCAAGGCGCGCCCGCGCCGGCGCCCGAAGGCGCGCCGCCGCGGCCG
GCCGCGGGCGCGGCGGCCGGCTACGAGCATGCGCTCGAGGGCCCGTACGGCGATCACACCGGCTACTACAACGAG
CAGGAATGGTTTCCGGTCTTCACGGTCGAGCGGATCACGATGCGCCGCGATGCGATCTACCACTCGACGTACACC
GGCAAGCCGCCCGACGAGCCGGCCGTGCTCGGCGTCGCGCTGAACGAAGTGTTCGTGCCGCTGCTGCAGAAGCAG
TTCGCCGAGATCACCGATTTCTATCTGCCGCCCGAGGGTTGCAGCTACCGGATGGCGATCGTCCAGATGAAGAAG
AGTTACGCGGGACACGCGAAGCGGGTGATGTTCGGCGTCTGGAGCTTCCTGCGGCAGTTCATGTATACGAAGTTC
ATCGTGGTCGTCGACGAGGACGTGAACGTGCGCGACTGGAAGGAAGTGATCTGGGCGATCACGACGCGCGTCGAT
CCGGCGCGCGACACGGTGCTCGTCGAGAACACGCCGATCGACTATCTCGACTTCGCGTCGCCCGTCGCCGGCCTC
GGCTCGAAGATGGGGCTCGATGCGACCAACAAGTGGCCGGGCGAAACCCAGCGCGAATGGGGCCGGCCGATCGAG
ATGGACGCCGCCGTGAAGGCGCGCGTCGATCGTCTGTGGACGGAGATCGGCCTATCGTGA

296. ***Burkholderia pseudomallei K96243*** **(SEQ ID NO. 296)**

ATGAAATACAAAGATTTACGCGATTTCATCCATGGCCTCGAGCAGCGCGGCGAGTTGCGGCGCGTCACCCAGCCC
GTATCGCCCGTCCTCGAAATGACCGAACTCTGCGACCGCGTGCTGCGCGCGGGCGGCCCCGCGCTCCTGTTCGAC
GCGCCGGCCGGCCACCGGTTTCCGGTGCTCGGCAATCTGTTCGGCACGCCGCGGCGCGTCGCGCTCGGCATGGGC
GTCGACGCCGACGACGAAGCGGCGCTCGCGTCGCTGCGCGACATCGGCCGCCTGCTGTCCGCGCTCAAGGAGCCG
GACCCGCCGAAGCGCCTGAAGGACGCGGGCAAGTTGCTGTCGCTCGCGAAGGCCGTGTGGGACATGAGCCCGAAG
ACGGTCTCCGCGCCGCCGTGCCAGGAGATCGTCTGGGAAGGCGACGACGTCGATCTGCACAAGCTGCCGATCCAG
ACCTGCTGGCCGGGCGACGCCGGGCCGCTGCTCACGTGGGGCCTGACCGTCACGCGCGGGCCGAACAAGACGCGC
CAGAATCTGGGCATCTACCGGCAGCAACTGATCGGACGCAACAAACTGATCATGCGCTGGCTCGCGCATCGCGGC
GGCGCGCTCGATTTCCGCGAATTCGCGCTGAAGCATCCGGGCCAGCCCTATCCCGTCGCCGTCGTGCTCGGCGCC

GATCCGGCGACGATGCTCGGGGCCGTCACGCCCGTGCCCGATTCGCTGTCCGAATACCAGTTCGCGGGCCTGCTG
CGCGGCGCGCGCACCGAACTCGCGAAATGCGTGACGCCCGGCGTCGACGCGCTGCAGGTGCCGGCGCGCGCGGAA
ATCGTGCTCGAAGGCTTCATCCACCCGCAGCAAGGCGCGCCCGCGCCGGCGCCCGAAGGCGCGCCGCCGCGGCCG
GCCGCGGGCGCGGCGGCCGGCTACGAGCATGCGCTCGAGGGCCCGTACGGCGATCACACCGGCTACTACAACGAG
CAGGAATGGTTTCCGGTCTTCACGGTCGAGCGGATCACGATGCGCCGCGATGCGATCTACCACTCGACGTACACC
GGCAAGCCGCCCGACGAGCCGGCCGTGCTCGGCGTCGCGCTGAACGAAGTGTTCGTGCCGCTGCTGCAGAAGCAG
TTCGCCGAGATCACCGATTTCTATCTGCCGCCCGAGGGTTGCAGCTACCGGATGGCGATCGTCCAGATGAAGAAG
AGTTACGCGGGACACGCGAAGCGGGTGATGTTCGGCGTCTGGAGCTTCCTGCGGCAGTTCATGTATACGAAGTTC
ATCGTGGTCGTCGACGAGGACGTGAACGTGCGCGACTGGAAGGAAGTGATCTGGGCGATCACGACGCGCGTCGAT
CCGGCGCGCGACACGGTGCTCGTCGAGAACACGCCGATCGACTATCTCGACTTCGCTTCGCCCGTCGCCGGCCTC
GGCTCGAAGATGGGGCTCGATGCGACCAACAAGTGGCCGGGCGAAACCCAGCGCGAATGGGGCCGGCCGATCGAG
ATGGACGCCGCCGTGAAGGCGCGCGTCGATCGTCTGTGGACGGAGATCGGCCTGTCGTGA

297. ***Bordetella parapertussis*** **(SEQ ID NO. 297)**

TTGAAGTATCGCGACCTCCGAGATTTTCTTGCCCAGCTTGAACGCCAGGGCGAACTCAAACGCATCACCGCGCCG
GTCTCGACGCGGCTGGAAATGACCGAGATTGCCGACCGGGTGCTGCGCGCCGGCGGCCCGGCCCTGCTGTTCGAG
AACGCCCGCCACAACGACGCGCCGGCCGACATGCCGGTGCTGGCCAACCTGTTCGGCACGCCGCGGCGGGTCGCC
TGGGGCATGGGGGCCGACGACGTCGGCGCCCTGCGCGAAACCGGCGAACTGCTGGCCTCCCTGCGCGAGCCCGAA
GCGCCCAAGGGCCTGCGCGACGCGCTGGCCAAGGTGTCCATGCTGAAAGCCGCCCTGTGGGACATGAGCCCCAAG
ACCGTGCGCAGCGCCGCCTGCCAGGAAATCGTCTGGGAAGGCGCCGACGTCGACCTGGGCCGCCTGCCCATCCAG
ACCTGCTGGCCGGGCGATGTGGCGCCCCTGCTCGCCTGGGGCCTGGTGATCACGCGCGGGCCGAACGCCCGGCGG
CAGAACCTGGGTATCTACCGCCAGCAGCCGCTGGGGCCGAACAAGCTGATCATGCGCTGGCTGTCGCACCGCGGC
GGCGCGCTGGACTTCCGCGACCACGCCCAGGCCCACCCGGGCAAGTCGTTTCCCATCGCCGTGGCGCTGGGTGCC
GACCCGGCCACCATCCTGGACGCGGTCACGCCGGTGCCGGACACGCTGTCCGAATACCAGTTCGCCGGGCTGCTG
CGCGGCTCGCGCACCGAGGTCGTCAAGGCGCTGGGCAGCGACCTGTCGGTGCCGGCCTCGGCCGAGATCGTGCTC
GAGGGCCACCTGCTGCCGGCCGACGATCCGCGCGCCGTCGCTGCCGCGGTGCCCGAGGGCGCCAACCCGCCCCCG
GCCACCGGCTACGAAATGGCCCTCGAAGGCCCCTATGGCGACCATACCGGCTACTACAACGAGCAGGACTGGTTC
CCGGTGTTCACGGTGGACCGCATCACCATGCGGCGCAACCCCATCTACCACTCCACCTATACCGGCAAGCCGCCC
GACGAGCCGGCCGTGCTGGGCGTGGCGCTGAACGAGGTATTCGTGCCGCTGCTGCGCCGCCAGCTGCCCGAAATC
GTCGATTTCTACCTGCCCCCGGAAGGCTGCAGCTACCGCCTGGCGGTGGTGTCGATCCGCAAGCAGTACGCCGGC
CACGCCAAGCGCGTGATGTTCGGCCTGTGGAGCGTGCTGCGGCAGTTCATGTACACCAAGTTCATCGTGGTGGTC
GACGAAGACATCGACCCGCGCGACTGGACCGAAGTGGTCTGGGCCATGACCACGCGCATGGACCCCGTGCGCGAC
ACGGTGCTGGTCGAGAACACGCCGATCGATTACCTCGATTTCGCCTCGCCGGTGTCCGGCCTGGGCGGCAAGATG
GGGCTGGACGCCACCAACAAGTGGCCGGGCGAAACCAGCCGCGAATGGGGCACGCCCATACACATGGACGAGGCG
GTCAAGCGCCGGGTGGATGCCATGTGGGACACGCTGGGACTGTAG

298. ***Bordetella bronchiseptica RB50*** **(SEQ ID NO. 298)**

TTGAAGTATCGCGACCTCCGAGATTTTCTTGCCCAGCTTGAACGCCAGGGCGAACTCAAACGCATCACCGCGCCG
GTCTCGACGCGGCTGGAAATGACCGAGATTGCCGACCGGGTGCTGCGCGCCGGCGGCCCGGCCCTGCTGTTCGAG
AACGCCCGCCACAACGACGCGCCGGCCGACATGCCGGTGCTGGCCAACCTGTTCGGCACGCCGCGGCGGGTCGCC

TGGGGCATGGGGGCCGACGACGTCGGCGCCCTGCGCGAAACCGGCGAACTGCTGGCCTCCCTGCGCGAGCCCGAA
GCGCCCAAGGGCCTGCGCGACGCGCTGGCCAAGGTGTCCATGCTGAAAGCCGCCCTGTGGGACATGAGCCCCAAG
ACCGTGCGCAGCGCCGCCTGCCAGGAAATCGTCTGGGAAGGCGCCGACGTCGACCTGGGCCGCCTGCCCATCCAG
ACCTGCTGGCCGGGCGATGTGGCGCCCCTGCTCGCCTGGGGCCTGGTGATCACGCGCGGGCCGAACGCCCGGCGG
CAGAACCTGGGTATCTACCGCCAGCAGCCGCTGGGGCCGAACAAGCTGATCATGCGCTGGCTGTCGCACCGCGGC
GGCGCGCTGGACTTCCGCGACCACGCCCAGGCCCACCCGGGCAAGCCGTTTCCCATCGCCGTGGCGCTGGGTGCC
GACCCGGCCACCATCCTGGGCGCGGTCACGCCGGTGCCGGACACGCTGTCCGAATACCAGTTCGCCGGGCTGCTG
CGCGGCTCGCGCACCGAGGTCGTCAAGGCGCTGGGCAGCGACCTGTCGGTGCCGGCCTCGGCCGAGATCGTGCTC
GAGGGCCACCTGCTGCCGGCCGACGATCCGCGCGCCGTCGCTGCCGCGGTGCCCGAGGGCGCCAACCCGCCCCCG
GCCACCGGCTACGAAATGGCCCTCGAAGGCCCCTATGGCGACCATACCGGCTACTACAACGAGCAGGACTGGTTC
CCGGTGTTCACGGTGGACCGCATCACCATGCGGCGCAACCCCATCTACCACTCCACCTATACCGGCAAGCCGCCC
GACGAGCCGGCCGTGCTGGGCGTGGCGCTGAACGAGGTATTCGTGCCGCTGCTGCGCCGCCAGCTGCCCGAAATC
GTCGATTTCTACCTGCCCCCGGAAGGCTGCAGCTACCGCCTGGCGGTGGTGTCGATCCGCAAGCAGTACGCCGGC
CACGCCAAGCGCGTGATGTTCGGCCTGTGGAGCGTGCTGCGGCAGTTCATGTACACCAAGTTCATCGTGGTGGTC
GACGAAGACATCGACCCGCGCGACTGGACCGAAGTGGTCTGGGCCATGACCACGCGCATGGACCCCGTGCGCGAC
ACGGTGCTGGTCGAGAACACGCCGATCGATTACCTCGATTTCGCCTCGCCGGTGTCCGGCCTGGGCGGCAAGATG
GGGCTGGACGCCACCAACAAGTGGCCGGGCGAAACCAGCCGCGAATGGGGCACGCCCATACACATGGACGAGGCG
GTCAAGCGCCGGGTGGATGCCATGTGGGACACGCTGGGACTGTAG

299. Bordetella pertussis Tohama I (SEQ ID NO. 299)

TTGCCGGGATCTGCCTTGAAGTACCGCGACCTCCGAGATTTTCTTGCCCAGCTCGAACGCCAGGGCGAACTCAAA
CGCATCACCGCGCCGGTCTCGACGCGGCTGGAAATGACCGAGATTGCCGACCGGGTGCTGCGCGCCGGCGGCCCG
GCCCTGCTGTTCGAGAACGCCCGCCACAACGACGCGCCGGCCGACATGCCGGTGCTGGCCAACCTGTTCGGCACG
CCGCGGCGGGTCGCCTGGGGCATGGGGGCCGACGACGTCGGCGCCCTGCGCGAAACCGGCGAACTGCTGGCCTCC
CTGCGCGAGCCCGAAGCGCCCAAGGGCCTGCGCGACGCGCTGGCCAAGGTGTCCATGCTGAAAGCCGCCCTGTGG
GACATGAGCCCCAAGACCGTGCGCAGCGCCGCCTGCCAGGAAATCGTCTGGGAAGGCGCCGACGTCGAGCTGAGC
CGCCTGCCCATCCAGACCTGCTGGCCGGGCGACGTGGCGCCCCTGCTCGCCTGGGGCCTGGTGATCACGCGCGGG
CCGAACGCCCGGCGGCAGAACCTGGGCATCTACCGCCAGCAGCCGCTGGGGCCGAACAAGCTGATCATGCGCTGG
CTGTCGCACCGGGGCGGCGCGCTGGACTTCCGCGACCACGCCCAGGCCCACCCGGGCAAGCCGTTTCCCATCACC
GTGGCGCTGGGCGCCGACCCGGCCACCATCCTGGGCGCGGTCACGCCGGTGCCGGACACGCTGTCCGAATACCAG
TTCGCCGGGCTGCTGCGCGGCTCGCGCACCGAGGTCGTCAAGGCGCTGGGCAGCGACCTGTCGGTGCCGGCCTCG
GCCGAGATCGTGCTCGAGGGCCACCTGCTGCCGGCCGACGATCCGCGCGCCGTCGCTGCCGTGGTGCCCGAGGGC
GCCAACCCGCCCCCGGCCACCGGCTACGAAATGGCGCTCGAAGGCCCCTATGGCGACCATACCGGCTACTACAAC
GAGCAGGACTGGTTCCCGGTGTTCACGGTGGACCGCATCACCATGCGGCGCAACCCCATCTACCACTCCACCTAT
ACCGGCAAGCCGCCCGACGAGCCGGCCGTGCTGGGCGTGGCGCTGAACGAGGTATTCGTGCCGCTGCTGCGCCGC
CAGCTGCCCGAGATCGTCGATTTCTACCTGCCCCCGGAAGGCTGCAGCTACCGCCTGGCGGTGGTGTCGATCCGC
AAGCAGTACGCCGGCCACGCCAAGCGCGTGATGTTCGGCCTGTGGAGCGTGCTGCGGCAGTTCATGTACACCAAG
TTCATCGTGGTGGTCGACGAAGACATCGACCCGCGCGACTGGACCGAAGTGGTCTGGGCCATGACCACGCGCATG
GACCCCGTGCGCGACACGGTGCTGGTCGAGAACGCGCCTATCGATTACCTGGATTTCGCCTCGCCGGTGTCCGGC

CTGGGCGGCAAGATGGGGCTGGACGCCACCAACAAGTGGCCGGGCGAAACCAGCCGCGAATGGGGCACGCCCATA
CACATGGACGAAGCGGTCAAGCGCCGGGTGGATGCCATGTGGGACACGCTGGGACTGTAG

300. ***Legionella pneumophila subsp. pneumophila str. Philadelphia 1*** **(SEQ ID NO. 300)**

ATGAAGTATTCAGATCTGAGAGATTTCATAGCCCAACTTGAATCACGTGAATTATTAAAACGTATTGATTATCCT
GTATCACCTCATCTTGAGATGACCCTAGTCAGCGATAAAGTGTTGCGCTCAGGAGGGCCAGCCCTTCTGTTTACC
AATACCCCCAATTACAACATGCCTGTACTGACCAATCTTTTTGGTACGGTAGAGCGCGTGGCTTTGGGAATGGGT
GAGGAATCAATAGTGGCTTTGAGGGAGATTGGAAAATTATTGGCTGCTTTAAAGGAGCCCGATCCTCCCAAAGGC
TTCAAAGACGCTTTTAGCAAGTTGCCCTTATTGAAACAAGCGCTGAATATGGCACCCAAATATGTCAGTGGAGCC
GAGTGCCAGACTCATGTGTGGGAAAAGGATGAAGTGGATTTAACCTTATTGCCCATCCAAACGTGTTGGCCCGGA
GATGTTGCTCCTCTAATTACCTGGGGTTTGGTTACTACTCGTGGCCCACACCAGTCCAGAGAAAACATGGGCATC
TATCGCCAGCAACTATTAAGTAAAAACAAATTGATCATGCGCTGGTTATCTCACCGCGGAGGTGCTTTGGATTAC
CAGGCCTGGCAACAAGAATATCCCAAAGAGCGTTTCCCTGTTGCGGTGACTTTAGGCGCTGATCCAGCCACCATA
CTGGCAGCAGTTACTCCCGTTCCTGATACTTTGTCTGAATACGCTTTTGCGGGCTTGCTTAGAGGACAACGAACT
CGGTTGACTCGATGCATTGGCAATGATTTGCATGTTCCAGCCAGCGCAGAAATTGTTTTGGAAGGTTATCTGGAG
CCAGGAAATGAGGCGCCCGAAGGGCCTTATGGCGATCACACCGGTTATTATAATGAAGTCCAATCTTTTCCTGTT
TTTACGGTAGAGCGTATTACTCATCGCGATAAACCTATTTACCACAGTACTTATACCGGAAGACCGCCAGATGAG
CCAGCCATTTTGGGAGTTGCCTTAAATGAAGTGTTCATTCCCTTGTTACAAAAACAATTCCCAGAGATTGTGGAT
TTTTATTTGCCGCCAGAAGGATGCTCTTATCGTTTGGCTGTAGTCACTATAAAAAAGCAATATCCAGGACATGCT
AAACGTATTATGATGGCTGTTTGGTCTTTCTTGCGCCAGTTTATGTATACCAAGTTCGTCATTGTTTGTGATGAT
GATGTGGACGCGCGCAATTGGCAAGATGTCATATGGGCAATGACCACACGCATGGATCCGTCCCGCGATACAGTC
ATGGTAGAAAATACACCCATTGATTATCTGGACTTCGCTTCCCCAGTTTCAGGATTGGGTTCCAAGATGGGTATG
GATGCTACCAGTAAATGGCCAGGAGAAACACAAAGAGAATGGGGTAAACCAATTACGATGGATGAAGATGTGCTT
AATAGAGTAAATGGTTATTGGTCCTTATTAGGATTAAAATAA

301. ***Klebsiella pneumoniae ATCC 13883*** **(SEQ ID NO. 301)**

AATGGCGCAGGAACGACCAGACGCCCATCATTACGCGCTTGGCATGTCCCGCGTACTGTTTTTTCATGGTCACCA
CCGCCAGGCGATAGGAGCACCCTTCCGGCGGCAGATAGAAATCAACGATTTCCGGGAACTGCTTTTGCAGGATCG
GCACAAAGACTTCATTCAGCGCCACGCCCAGCACCGCTGGCTCATCGGGCGGTCGGCCGGTATAGGTAGAATGAT
AAATCGCGTCTTCACGCTGGGTAATATGGGTTACCGTAAATACCGGGAAGCTGTCCACTTCATTATAGTAACCGG
TGTGATCGCCATACGGGCCTTCCGGCGCCATTTCACCGGCCTCAATGTAGCCTTCAAGCACAATTTCCGCGCTGG
CCGGCACTTCAAGGTCATTGGAAACGCACTTAACCACTTCGGTCTTGGTGCCGCGCAGCAGGCCTGCGAAAGCAT
ATTCCGACAGGGTATCGGGCACCGGCGTCACCGCGCCAAGAATGGTTGCCGGATCGGCGCCAAGCGCCACGGAAA
CCGGGAAGCGTTCGCCCGGACGCGCCGCGCACCACTCCTGGAAATCCAGCGCGCCGCCGCGATGAGACAGCCA

302. ***Serratia liquefasciens ATCC 27592*** **(SEQ ID NO. 302)**

CCCATCATTACGCGTTTAGCATGACCAGCATACTGTTTCTTGATGGTCACCACCGCCAGACGATAAGAACAGCCT
TCGGGCGGCAGATAGAAATCGACAATTTCCGGGAACTGCTTTTGCAGAATGGGAACGAAGACTTCGTTCAGCGCC
ACGCCCAGCACCGCAGGCTCATCCGGCGGACGGCCGGTGTAGGTCGAGTGGTAAATGGCATCGCGACGCTGGGTG
ATGTGAGTGATGGTAAATACCGGGAAGTGGTCGATCTCGTTGTAGTAACCGGTGTGATCGCCATACGGGCCTTCC
GGTGCCATTTCACCCGGTTCAATGTAGCCTTCCAACACGATTTCCGCGCTGGCCGGCACTTCCAAATCGCAGGAG
AGGCACTTGACCACTTCGGTTTTGTTGCCACGCAGCAGCCCGGCAAAAGCATATTCAGACAGGGTATCCGGTACC
GGCGTCACCGCGCCGAGGATAGTGGCGGGATCCGCCCCTAATGCCACCGCAACCGGGAAACGCTCACCAGGGTGC
GCCTGACACCATTCCTGATAATCCAACGCGCCGCCACGGTGGGACAGCCAACT

303. ***Brucella melitensis*** **(SEQ ID NO. 303)**

CCCGAAGCACCCGAAACACCGATGACGATCCGCTTCATATCCGTTTGTCCCTGTCGAGGCCGAGTTCATCCCAGA
TCGCGTCCACACGGGCGATGGTTTCTTCATTCATGGCCAGAACCTTGCCCCATTCGCGGTCCGTTTCAGGACCGA
TCTTGTTGGTGGCGTCAAGACCGAGCTTTCCGCCAAGGCCGGAGCGTGGCGAGGCGAAATCCAGATAATCGACCG
GCGTGTCGGAAAGTGTCACCACGTCGCGGCTTGCATCAAAGCGGGTGGCAAGCGCCCACATCACATCGTCCCAGT
TGTGTACATCGATATCGGGATCGACGGCGATAATGAGCTTGGTATAGCTGAACTGCGGCAGCATGGACCAAAGCC
CCATCATCACGCGCCGCGCCTGCCCCGGATAACGCTTGTCGATGGAAACCACCATGGCGCGGTAGGAACAGGCGG
CAGGCGGCAGCCAGAGATCGGCTATCTCGGGAAACTGCTTGCGCACGACAGGCACGAAAAGCTGGTTCATCACCT
CGCCAAGCCGCGAAGGCTCGTCCGGCGGGCGCTCCGTATAGGTGGAAAGATAGACCGGCTTCTTGCGCATGGTGA
TCGCCGTCACCTGCATGACGGGAAACGCCTCCACGCTGTTATAATAGCCGGTATGGTCCCCATAAGGCCCTTCGG
GCGCGGTTTGTGTAGCGGAAACCCGACCTTCAAGAACGATTTCTGCATTGGCGGGCACCATCAGCGGCACCGTGC
GCCCCTGCGTGACACACGGCCTGCGCCCGCCCAGAAGGCCGGAAAATGCAAGCTCGCTCATGCCTTCCGGCAGCG
GCATAACTGCGGCCAGAATGGTCGCCGGGTCAACGCCGATGGCAATTGCAACCGGCATGTCCTCACCGCGCTTTT
GCCACATGCGATGGTGGCGCGCGCCGCCGCGATGCGCGAGCCAGCGCATGATAAGCCGGTTCTCTCCCAGTTTCT
GCATCCGGTAAATGCCGACATTGACATCGGAGGGATCGTCCGGCGCGCGTGTGATAACGAGCGGCCAGGTGATGA
GCGGCGCAGGCTCGCCCGGCCAGCACCATTGGATCGGCAGCGTGTCGAGATTGACCGATGCGCCTTCCATCACAA
GGCCATGAACCGGCGCCCGGCTCACCTGGCGCGGGCGCATGTTGAGGGCTGCCTTGGCCATCGGCAGCTTTTCCC
ATATTTCACCGGCCGAACGCGGCGGCTTCGGCGCACGCAATTCGGCCAGCATTTCAGCCAGAAGCGGCAATTCCT
CCGGCAGACGCCCAAGCCCCCAGGCGATACGCCGCTCGGACCCGA

Figure 13. Molecular marker VIII (hypothetical protein yleA) in Gram-negative bacteria (SEQ ID NOs 304-325).

304. Haemophilus influenzae (SEQ ID NO. 304)

TTAGCCGTGATAACGCCCTACGCCTAATTCATCTTCTTTACGTGTGCGATTCATCACTTCTTGTGGAGATTGCGC
AATACGTAATCCCATTTCATCTTCAGTACGCACCACTTCGCCACGTAACGAATTAGTATAAACATCAGTGATTTT
CACATCCACAAACTTACCGATCATTTCTGGAGAACCTTGGAAATTAACAATACGATTCGTTTCAGTACGTCCCGT
CAATTCCATAATATCTTTCTTCGATGGGCCTTCAACTAACACGCGCTGCTCTGTGCCAAGCATACGACGGCTAAA
TTGTGCCGCTTGTTGATTAATACGCTCTTGTAGCACATAAAGACGCTGTTTCTTTTCATCTTCCGTGACATCATC
TGGCATATCTGCTGCTGGCGTACCTGGTCGGGCTGAGTACACAAAACTGAAGCTCATATCAAAGTTTACTTGTGC
AATCAAATTCATAGTTTGCTCAAAATCTTCCGCCGTTTCACCAGGGAAACCAACAATAAAGTCAGAGCTGATTTG
AATATCTGGGCGCACAGCACGAAGTTTACGAATAATGGATTTATATTCTAATGCGGTATGAGCACGTTTCATCAT
TGTTAATACACGGTCAGAACCTGCTTGCACTGGAAGATGTAAGAAACTCACTAATTCAGGCGTATCACGATACAC
ATCAATAATATCATCGGTAAATTCTATTGGATGACTGGTTGTGAAACGTAAACGGTCAATACCATCAATTGATGC
GACAAGACGAAGCAACTCAGCAAAGCTGCAAATTTGACCATCATGCGTTGGCCCACGATAAGCATTTACATTTTG
ACCAAGTAGATTGACCTCACGCACACCTTGTTCCGCAAGTTGCGCAATTTCAAATAGCACATCATCTACAGGACG
GCTAACTTCTTCTCCACGAGTATAAGGCACAACACAAAAAGTACAGTATTTATTACAGCCTTCCATAATGGAAAC
AAATGCCGTTGGGCCTTCTGCGCGAGGTTCTGGTAAGCGGTCAAATTTCTCAATTTCAGGGAAACTTACGTCTAC
GACGGAACTTTTTCCACCACGAATTTGATTAATCATTTCAGGCAAGCGATGCAAAGTTTGCGGGCCAAAAATAAT
ATCCACATAAGGCGCACGATGGCGAATATGTTCCCCTTCTTGAGAGGCTACACAGCCGCCCACACCAATCACTAA
ATTTGGATTATTTTTCTTTAATTCTTTCCAACGCCCAAGTTGGTGGAACACTTTTTCTTGTGCTTTTTCACGAAT
AGAACAGGTATTTAATAATAATACGTCTGCTTCTTCAGGTGCTTCCGTGAGTTCTAATCCGTGGGTGCTTAATAA
AAGATCAGCCATTTTAGATGAATCATATTCATTCATCTGGCAGCCCCAAGTTTTAATATGTAATTTTTGAGTCAT

305. Pasteurella multocida (SEQ ID NO. 305)

CTACGCGTGATAACGTCCCACGCCGAGTTCATCTTCTTTACGAGTACGATTAATCACCATTTGTGGCGATTGAAC
AACGCGAAGTCCCATTTGTTCTTCAGTTCTAACGACTTCACCACGCAGTGAGTTAGTAAACACATCCGTGATCTT
GATATCAACAAACTTCCCAATCATATCAGGCGTGCCCACAAAATTGACGATACGATTAGTTTCTGTACGCCCTGT
GAGTTCCATTAAATCTTTTTTCGAGGGTCCTTCCACTAACACGCGCTGTTCTGTGCCTAACATTGCTCGACTAAA
TTGCGCGGCTTGATTGTTAATGCGTTGTTGCAACACATATAAACGTTGTTTCTTCTCTTCTTCTGTCACATCATC
AGGCATATCTGCTGCTGGCGTGCCTGGACGTGCTGAATAAATGAAGCTGAAACTCATATCAAAATTTACTTGTGC
AATTAAATTCATGGTTTGCTCGAAATCTTCTGCTGTTTCGCCCGGGAAACCGACAATAAAATCTGAGCTAATTTG
AATCTCTGGACGCACCGCTCTTAACTTCCGAATAATCGATTTATATTCTAATGCCGTATGATTGCGTTTCATCAT
AGATAACACACGATCAGAACCACTTTGTACAGGTAAGTGTAAGAAACTCACCAACTCTGGCGTATCACGGTACAC
ATCAATAATGTCATCAGTGAACTCAATTGGGTGACTGGTGGTAAAACGTAAACGGTCAATACCATCAATAGCGGC
TACTAAACGTAACAATTCCGCAAAAGTACAAATACCGTCATCATGAGTTGCACCACGATAAGCGTTCACGTTTTG
TCCTAATAAATTCACTTCACGCACGCCTTGCTCTGCCAACTGTGCAATTTCAAATAATACATCATCCACTGGACG
ACTGACTTCTTCACCACGCGTATAAGGCACGACACAGAATGAGCAATATTTATTACAGCCTTCCATAATGGATAC
GAAAGCAGTTGGACCTTCTGCACGCGGTTCTGGTAAACGGTCGAATTTTTCAATTTCTGGAAAACTGACATCGAC
TACTGAGCTTTTACCACCTCTGATCTGATTGATCATTTCAGGTAAACGATGTAAGGTTTGTGGTCCAAAAATAAT

ATCGACATAAGGAGCACGAGTACGAATGTGTTCTCCTTCTTGTGAGGCAACACAGCCCCCAACACCGATAACGAG
TCCCGGCTTATGTTTCTTTAATTCTTTCCAACGTCCTAATTGATGGAAAACTTTTTCTTGTGCTTTTTCACGAAT
TGAGCAAGTGTTTAACAATAACACATCCGCTTCTTCCGGAATTTCTGTTAACTCTAAGCCGTGAGTACTGTTTAA
GAGATCTGCCATTTTAGATGAATCATATTCATTCATCTGACAACCCCACGTTTTAATATGTAATTTTTGCGTCAT

306. ***Haemophilus ducrei*** **(SEQ ID NO. 306)**

TTACAGATTTACTGCGTATTTGCCTACACCTAAATCATCTTCCTTACGGGTCCGTGCAATGACACTTGATGCTGA
TTCAACAATACGTAAACCCATTTGATCTTCTGTTCTGATCACTTCACCGCGTAATGAGTTTGAGTAAACATCGGT
GATTTTAATATCTACGAATTTGCCGATCATATTTGGTGTGCCGATGAAATTAACTACACGATTGGTTTCTGTACG
ACCCGTTAATTCCATAATATCTTTTTTAGATGGGCCTTCAACCAAAATTCGTTGTTCAGTGCCAAGCATTAAGCG
ACTAAATTGCATCGCTTGATGGTTAATTCGTTGTTGTAAGTGTGCTAAGCGGTCTTTTTTCTCATTTTCAGACAC
ATCATCAGGTAAGTCTGATGCAGGCGTACCTGGACGCGCAGAGTAGATAAAGCTAAAGCTCATATCAAAATTGAC
TTGTTCAATAATTTTCATTGTTTGTTCAAAGTCTTCCGCTGTTTCGCCAGGAAAGCCAACAATGAAATCTGAGCT
AATTTGGATATTTGGACGAACCGCACGTAATTTACGAATAATGGCTTTGTATTCTAATGCGGTGTGGTTACGTTT
CATCATGGTTAAAACACGATCGGCGCCACTTTGGATAGGTAAATGCAAGAAGCTGACCAATTCTGGAGTATCACG
ATACACTTCAATAATGTCGTCGGTGAATTCAATGGGGTGGCTTGTGGTATAACGTAAGCGGTCAATACCATCAAT
GGCGGCAACTAAACGTAATAATTCTGCAAAAGTGCAAATGCCACCATCAAAGGTTTCACCACGGTAAGCATTAAC
GTTTTGACCCAGCAAGTTAACTTCACGAACGCCTTGCTCTGCTAATTGTGCGATTTCGAATAAGACATCATCAAC
AGGGCGGGAAACTTCTTCACCACGGGTATAAGGCACTACACAGAATGAGCAGTATTTATTACAGCCTTCCATAAT
TGATACGAAAGCAGTTGGACCTTCTGCTTTGGGTTCTGGTAAGCGGTCGAATTTTTCAATTTCTGGGAAGGAGAT
ATCGACTACTGCACGATCGCCTGATCGGATCTGGTTGATCATTTCTGGTAAGCGGTGCAATGTTTGTGGCCCAAA
TACTATATCAACAAAAGGGGCACGTTCACGGATATGTTCACCTTCTTGTGAAGCAACACAGCCACCAACGCCAAT
AATTAAATCGGGTTTGTCCTTTTTCCAGTTTTTCCAACGACCAAGTTGTGAAAAGACTTTTTCTTGTGCTTTTTC
ACGAATTGAGCAAGTATTCAATAATAAAATATCCGCTTCTTCAGGTTTATCGGTTAATTCTAATCCGTGTGTTGA
GTTTAAGAGATCTGCCATTTTTGATGAGTCATACTCATTCATTTGGCAACCCCAAGTTGTGATATGTAATTTTGC
CAT

307. ***Vibrio parahaemolyticus*** **(SEQ ID NO. 307)**

TTATGGCGTAAAAGTAGCTACACCTAGCTCATCTTCGCGACGTGTTTTCGCCATCATTTGTGTTGGAGAAATCAC
ACTACGAAGGTCCATGTCTTTTTCTGTACGTACTAGCTCACCACGTAGCGAGTTTGCAAATACGTCCGTAATCTT
CACGTCAACGAACTGACCAATTAGGTCTGCGCTACCTTCAAAGTTTACTACACGGTTGTTTTCTGTACGAGCGCG
CAGTTCCATTAGGTTTTTCTTAGAAGGGCCTTCAACCAGTACACGCTGCTCAGTAGCAAGCATTAGGCGTGAGTA
ACGCATTGCTTGTGCATTGATGGTTTGTTGCAGCTCGTATAGACGCTCTTTCTTCACTTGCTCTGGTATATCACA
AGGGTAATCTGCCGCAGGTGTACCTGGACGAGGTGAGAAGATAAAGCTGAAGCTCATGTCAAAGTCTACGTCTTT
GATTAGCTTCATTGTGTCTTGGAAGTCTTTGTCTGTTTCACCAGGGAAACCAACAATAAAGTCAGAACTGATTTG
GATATCAGGACGCGCTTTACGTAGTTTACGGATGATCGACTTGTACTCGATAGCTGTGTGAGGACGCTTCATCAT
CGTTAGAATACGGTCACTACCACTTTGTACTGGCAGGTGTAGGAAACTCACAAGCTCCGGGGTATCTTCGTAAAC
CGCGATGATGTCGTCTGTAAACTCTAGCGGGTGGCTAGTCGTGAAACGAATACGGTCGATACCATCGATAGATGC
AACGAGACGAAGCAGTTCAGCAAAAGAGCAGATCTCGCCGTCGTGCATAGGGCCACGGTATGCGTTTACGTTTTG
ACCTAGTAGGTTAACTTCACGTACACCTTGTTCCGCTAGCTGTGCAATCTCGAATAACACGTCATCCATTGGACG

ACTAACTTCTTCACCACGAGTGTATGGTACAACGCAGTAAGTGCAGTATTTTGAACAGCCTTCCATGATAGAAAC
AAACGCCGTCGCACCTTCTGCACGTGGCTCAGGTAGGCGGTCGAACTTTTCAATCTCTGGGAACGAAATGTCCAT
TACCGGTGCATCGTCAGTTTGAGATTGTTTGATCATCTCAGGTAGGCGGTGCAGAGTTTGAGGGCCAAAGATCAC
GTCAACGTATGGTGCACGCTCACGGATGTGGTCACCTTCTTGTGTTGCTACACAACCACCTACACCGATAACTAC
GCCAGGTTTTTTATCTTTTAGTGTTTTCCAACGGCCTAGCTGGTGGAAAACTTTCTCTTGCGCTTTTTCACGGAT
CGAACAGGTGTTAAGTAGAAGTACGTCTGCTTCCTCTGGCTCTTCCGTCAGCTCATAGCCGTTTGCAGCATTAAG
CAGGTCGGCCATTTTTGATGAATCGTATTCGTTCATCTGGCAGCCCCAGGTTTTAATTAGCAGTTTCTTACTCAT

308. ***Yersinia pestis*** **(SEQ ID NO. 308)**

GAATTTACCAATCATGTCGGGTGAACCCTCAAAGTTCACGACGCGGTTGTTTTCCGTACGCCCGGCCAGTTCCAT
GACATTTTTGCGAGAGGTACCCTCCACCAAAACACGCTGTACTGTCCCTACCATCTTACGGCTAATTTCCATCGC
CTGTTGGCTAATGCGTTGTTGCAGGATATGTAGCCGCTGTTTTTTCTCCTCTTCGGACACATTGTTGGGTAAATC
AGCCGCTGGTGTGCCGGGACGCGGGGAGTAAATAAAGCTGTAGCTGGTATCAAAATGAATATCTGCGACCAGTTT
CATGGTCTGTTCAAAATCCTGCTGGGTTTCACCAGGGAAGCCGACAATAAAATCAGAACTTATCTGGATATCAGG
GCGTGCTTGACGCAGTTTGCGGATGATGGCTTTGTATTCCAAGGCGGTATGGGCACGCTTCATCATGGTCAAAAT
ACGGTCAGAACCGCTTTGTACCGGCAAATGCAGGAAGCTCACCAATTCAGGCGTATCGCGATAAACATCAATGAT
ATCGTCAGTAAACTCAATGGGGTGGCTGGTGGTAAATCGTACCCTATCGATACCATCAATCGCCGCAACCAAACG
CAACAGCTCGGCAAAACTACAGATATCGCCATCGTAGGTTGCCCCGCGGTAGGCGTTAACATTCTGGCCGAGTAA
GTTGACTTCACGTACGCCTTGAGCGGCTAACTGGGCGATTTCAAAAAGAATGTCATCGCTTGGACGGCTGACTTC
CTCGCCTCGGGTGTAGGGTACGACACAGAATGTACAATATTTATTGCAGCCTTCCATGATCGAAACAAACGCAGT
TGGGCCTTCAGCCCGTGGTTCTGGCAAACGGTCAAATTTTTCAATTTCGGGAAAACTGATATCCACGACAGGGCT
ATTCGTTCCTTGCACGTGGTTAATCATTTCCGGTAAACGATGCAGCGTTTGTGGCCCGAAGATGACATCGACACA
GGGGGCGCGCTGGCGCAATTGTTCACCTTCCTGTGACGCCACGCAACCACCGACCCCAATAATCAACTGCGGGTT
TTTCTCTTTCAATAATTTCCATTGCCCTAGCAGGCTGAATACTTTTTCCTGTGCTTTTTCCCGGATAGAACAGGT
ATTTAGCAGCAGTAAATCCGCTTCTTCCGGGATGGTGGTTAACTGGTAGCCATGGGTACTGGCCAAGAGATCTGC
CATTTTAGATGAATCGTATTCATTCATCTGGCAACCCCAGGTTTTGATATGCAGTTTTTTAGTCATCGGGTTATT
CATCATCAAAATCACCTCGTTCCGTGCGGTACTCCGTTGTGGTAGATAATCTCCGTTGTAGTAGAGAGTCGCAAA
GGCTTCGTCGTTAGGGAGCATTGTAGTCATTTGCCTCTGCGATGACCACCGCAGAACCGTTGAGTTATTCTGTTG
AGTGATAAAAAATCCGTTACACTGCGGTTAGACAAAACCTTGCTAATG

309. ***Vibrio cholerae*** **(SEQ ID NO. 309)**

TCTTCACTTCTTCCGACAGATCGCAAGGATAGTCAGCGGCGGGTGTGCCTGGACGAGGTGAGAAAATAAAGCTAA
AGCTCATGTCGAAATCGACATCGCGGATCAGCTTCATGGTGTCTTGGAAATCTTTGTCGGTTTCCCCTGGGAAGC
CAACGATAAAATCAGAGCTGATTTGAATATCTGGGCGTGCTTTACGTAGCTTACGGATGATGGATTTGTACTCAA
TCGCCGTATGTGGACGCTTCATCATAGTCAGAATGCGATCGCTCCCACTTTGTACTGGCAAGTGCAGGAAGCTCA
CCAGCTCAGGCGTGTCTTCGTACACTGCAATAATGTCATCGGTAAATTCGAGTGGGTGGCTAGTGGTAAAGCGGA
TACGATCGATGCCGTCAATGGTGGCGACCAAACGCAGTAATTCAGCGAAAGAGCAAATGCCGCCATCGTGAGTGG
CACCACGGTAAGCGTTGACGTTTTGACCCAGCAGGTTAACTTCACGCACCCCTTGCTCGGCAAGCTGAGCGATCT
CGAACAGGACATCGTCCATAGGACGGCTGACTTCTTCACCGCGTGTGTAAGGCACTACGCAGTAAGTACAGTATT
TTGAGCAGCCTTCCATGATAGAAACGAACGCCGTTGGGCCTTCCGCACGTGGCTCAGGCAGGCGGTCGAATTTTT

CAATCTCAGGGAAAGAGATATCCATCACGGGCGCGTCGCTGGTTTGCGATTGTTTAATCATTTCTGGCAGACGAT
GCAGCGTCTGTGGGCCGAAGATGACATCCACATAAGGCGCACGATCGCGAATCGAGTCACCTTCTTGAGTAGCAA
CACAGCCACCGACACCGATCACGACACCTGGCTTCTTGTCTTTCAGGGTTTTCCAACGACCGAGTTGGTGGAAGA
CTTTTTCCTGCGCCTTTTCACGAATCGAACAGGTGTTTAGGAGTAAAACGTCAGCTTCCTCGGGTATTTCTGTCA
GCTCATAGCCGTTTGCAGCATTAAGCAGGTCAGCCATTTTCGATGAATCGTACTCGTTCATCTGGCAGCCCCAAG
TTTTAATTAGCAGTTTCTTACTCATCTCACTTTCGCTCGTTCAATAGTTCTTCAATCATTTGAGCTGTAGCTCAC
ATTCTAGCCGCCCTCTCGGCGGTAAGCGGCGTATTGTACTGCTTTAAAAACCGACTGACTAGTAATTGGCGGAAT
TCTCTTGTAACCCTTG

310. ***Escherichia coli souche K12*** **(SEQ ID NO. 310)**

TTACGGCTGATAATAACCCACGCCAAGGTCGTTTTCTTTGCGGGTACGGGCAATCACTGATTCCGGTGTTTCTGC
CACGCGCAGACCCATTTCATCTTCAGTACGCACCACTTTACCGCGCAGAGAGTTCGGGTAGACGTCGGTAATTTC
TACATCGACGAATTTACCGATCATATCCGGCGTGCCTTCGAAGTTGACCACGCGGTTATTTTCCGTACGCCCGGA
AAGCTCCATGATGCTCTTACGCGATGTACCTTCTACCAGAATACGCTGGGTGGTGCCGAGCATCCGGCGGCTCCA
CGCCATCGCTTGCTGATTAATGCGCTCTTGCAGAATATACAGACGCTGCTTCTTCTCTTCTTCCGGAACATCATC
AACCATATCGGCGGCTGGTGTACCCGGACGTGCAGAGAAGATAAAGCTGTAGCTCATGTCGAAATTGACGTCGGC
AATCAGCTTCATCGTTTTCTCGAAGTCTTCGGTGGTTTCGCCAGGGAAGCCAACGATGAAATCAGAACTGATCTG
AATATCTGGACGCGCCGCACGCAGTTTACGGATGATCGCTTTGTACTCCAGCGCCGTATGGGTACGGCCCATCAG
GTTCAGAATGCGATCGGAACCGCTCTGTACCGGCAGATGCAGGAAGCTCACCAGCTCCGGCGTGTCGCGATACAC
TTCGATGATACGTCGGTGAATTCGATCGGATGGCTGGTGGTAAAGCGAATACGATCGATCCCGTCGATCGCAGCA
ACCAGACGCAGCAGATCGGCAAACGATCCGGTGGTGCCGTCGTAGTTTTCACCACGCCAGGCGTTCACGTTCTGA
CCGAGCAGGTTGACTTCACGCACGCCCTGAGCCGCAAGCTGGGCAATCTCAAACAGAATATCGTCGGACGGACGG
CTTACCTCTTCACCACGGGTGTAAGGCACCACGCAGTAGGTGCAATATTTATTGCAGCCTTCCATGATGGAGACA
AACGCGGTCGGCCCTTCGGCGCGCGGTTCCGGTAGACGGTCAAACTTCTCGATTTCCGGGAAGCTGATATCTACA
ACCGGGCTGCGGTCGCCACGCACGGAGTTGATCATCTCCGGCAGACGGTGCAGCGTTTGCGGCCCAAAAATAATA
TCGACATAGTGGGCGCGCTGGCGAATGTGCTCGCCTTCTTGCGATGCCACGCAGCCACCGACGCCGATAATCAGG
TCTGGATTCTTCTCTTTTAACAGTTTCCAGCGACCCAACTGATGGAAGACTTTTTCCTGAGCCTTCTCGCGGATT
GAGCAGGTGTTCAGCAGCAGCACATCCGCTTCTTCCGCCACGTCGGTCAGTTGATAGCCGTGGGTGGCATCCAGC
AGATCGGCCATCTTCGATGAATCGTACTCGTTCATCTGACAGCCCCAGGTTTTAATATGGAGTTTTTTGGTCAT

311. ***Escherichia coli souche 0157:H7*** **(SEQ ID NO. 311)**

TTACGGCTGATAATAACCCACGCCAAGGTCGTTTTCTTTGCGAGTACGGGCAATCACCGATTCTGGTGTTTCTGC
CACGCGCAGACCCATTTCATCTTCAGTACGCACCACTTTACCGCGCAGAGAGTTCGGGTAGACGTCGGTAATTTC
TACATCGACGAATTTACCGATCATATCCGGCGTGCCTTCGAAGTTGACCACGCGGTTATTTTCCGTACGCCCGGA
AAGCTCCATGATGCTCTTACGCGATGTACCTTCTACCAGAATACGCTGGGTGGTGCCGAGCATCCGGCGGYTCCA
CGCCATCGCTTGCTGATTGATACGTTCTTGCAGAATATACAGACGCTGCTTCTTCTCTTCTTCCGGAACATCATC
AACCATATCGGCGGCTGGTGTACCCGGACGTGCAGAGAAGATAAAGCTGTAGCTCATGTCGAAATTGACGTCGGC
AATCAGCTTCATCGTTTTCTCGAAGTCTTCGGTGGTTTCGCCAGGGAAGCCGACGATGAAGTCAGAACTGATCTG
AATATCTGGACGCGCCGCACGCAGTTTACGGATGATCGCTTTGTACTCCAGCGCCGTATGGGTACGTCCCATCAG
GTTCAGAATGCGATCGGAACCGCTCTGTACCGGCAGATGCAGGAAGCTCACCAGCTCCGGCGTGTCGCGATACAC

TTCGATGATATCGTCGGTGAATTCGATCGGATGGCTGGTGGTAAAGCGAATACGATCGATCCCGTCGATCGCAGC
AACCAGACGCAACAGATCGGCAAACGATCCGGTGGTGCCGTCGTAGTTTTCACCACGCCAGGCGTTCACGTTCTG
ACCGAGCAGGTTGACTTCACGCACGCCCTGAGCCGCAAGCTGGGCAATCTCAAACAGAATATCGTCAGACGGACG
GCTTACCTCTTCACCACGGGTGTAAGGCACCACGCAGTAGGTGCAATATTTATTGCAGCCTTCCATGATGGAGAC
AAACGCGGTCGGCCCTTCGGCGCGCGGTTCCGGTAGACGGTCAAACTTCTCGATTTCCGGGAAGCTGATATCTAC
AACCGGGCTGCGGTCGCCGCGCACGGAGTTGATCATCTCCGGCAGACGGTGCAGCGTTTGCGGCCCAAAAATAAT
ATCGACATAGTGGGCGCGCTGGCGAATGTGCTCGCCTTCTTGCGATGCCACGCAGCCACCGACGCCGATAATCAG
GTCTGGATTCTTCTCTTTTAACAGTTTCCAGCGACCCAACTGATGGAAGACTTTTTCCTGAGCCTTCTCGCGGAT
TGAGCAGGTGTTCAGCAGCAGCACATCCGCTTCTTCCGCCACGTCGGTCAGTTGATAGCCGTGGGTGGCATCCAG
CAGATCGGCCATCTTCGATGAATCGTACTCGTTCATCTGACAGCCCCAGGTTTTAATATGGAGTTTTTTGGTCAT

312. ***Pseudomonas aeruginosa*** **(SEQ ID NO. 312)**

CCGCCGTACGGTCGTCGGCCTCAATGCAGGGTGCTGTCGATCAGGGTACCGCGCAGCGAGTGCGGCAGCGCGTCG
TCGATGTGCACCTGGGCGAACTGGCCGATCAGGCGTGGATTGTCGCAGCGGAAGTTGACGATCCGGTTGTTCTCG
GTGCGCCCCTGGAGCATGCCTGGGTCCTTCTTCGAGAAGTCGGTGACCAGGATCCGCTGGGTGCTGCCGACCATG
CGCCGGCTGATCTCGTAGCCTTGCTGGTGGATGCGGCTCTGGAGGATCTGCAGGCGCTGTTTCTTCACTTCTTCC
GGCAGGTCGTCGGCGAGGTCGGCGGCGGGCGTGCCGGGCCGCGCGCTGTAGATGAAGGAGAAGGAGAAGTCGAAG
CCGACGTCCTCCACCAGCTTCATGGTCTGCTCGAAGTCCTTCTCGGTTTCGCCGGGGAAACCGACGATGAAGTCG
GAGCTGATGCAGATGTCCGGTACCGCGGCCTTCAGCTTGCGGATACGCGACTTGTATTCCAGCACGGTATGGTTG
CGCTTCATCGCCGCCAGCACGCGGTCGGAGCCCGACTGCACCGGCAGGTGGATGAATTTCACCAGCTCCGGCACC
TCGGCGTGGGCCTGGATCAGCGCGTCGGAGAATTCCAGCGGGTGCGAGGTGGTATAGCGGATGCGCTCGATACCG
TCGACGGCGGCGACCACCCGCAGCAGTTCGGCGAAGTCGGCCAGGCGGCCATCGTGGGTCAGGCCGCGGAAGCCG
TTGACGTTCTGTCCCAGCAGGGTGACTTCGCGGACGCCGTTCTCGGCCAGGTGGATCACTTCGGCGATCACGTCG
TCGAATGGTCGGCTGACTTCCTCGCCGCGGGTGTAGGGCACCACGCAGAAGCTGCAGTACTTGCTGCAGCCTTCC
ATCACCGAGACGAAGGCGGTGGGGCCATCGACCCGCGGTTCCGGCAGGCGGTCGAATTTCTCGATTTCCGGGAAG
GACACGTCGACCTGCGGCTTGCGCGTGCTGCGCGCGGCGTCGATCATTTCCGGCAGGCGGTGCAGGGTCTGCGGG
CCGAAGACCACGTCGACATAGGGCGCGCGCTCACGGATCGCGGCGCCTTCCTGGCTGGCCACGCAGCCGCCGACG
CCGATCACCAGGTCGGGATTCTGCTGCTTCAGCTCGCGCCACATGCCGAGCTTGGAAAACACCTTTTCCTGGGCC
TTCTCGCGGATCGAGCAGGTATTGAGCAGGATGACGTCGGCCTCGGCGGCGTTTTCGGTCACCTCGAGGGCTTGG
TGTTCACCGAGCAGGTCCGCCATTCGCGACGAGTCGTACTCGTTCATCTGGCAGCCGTGGGTTTCGATGAAAAGC
TTCTTGGCCATGCGCTTCGTCGGACAGTTCGAAAAGGACCGCGCATTATAGAGGGCGGGGCCCCCGGTTCCTAGC
GTTGCTGGCCGAAAGGCTGTGCTATGATTCGCGCCCTTCATTTTCCGGCATTGCTTTCCCCGCCATGAACAAGCG
CGAAAACCCCATCTACAAGGTGATTTTCCTCAACCAGGGCCAGGTCTTCGAGATGTATGC

313. ***Bordetella pertussis*** **(SEQ ID NO. 313)**

TCATTCGGCTCCGGATGTGTCGCGTTCGATGCCGGCGACACGGCCGCGCAGCGAGTTGGTGTGGGCGTGGGTGAC
GACGACGTCGACCATGTGGCCGATCAGGCGCGGCACGCCGGGAAAGTTGACGATACGGTTGTTCTCGGTACGGCC
CATCAGCTCGTTGGGGTCGCGCCGCGAAGGGCCTTCGACCAGCACGCGCTGGCGGGTGCCGATCATGCCCTGGGC
GATGGCCGCGGCCTGCTGGTTGATGAGCGCCTGCAACTGCTGCAGGCGGCGCAGCTTGACGTCCTGCGGCGTGTC
ATCGTGCAGGTCGGCGGCCGGCGTGCCGGGCCGGCGCGAATACACGAACGAGAACGAGGTGTCGAAGCCGACGTC

CTCGATCAGCTTCATGGTCTTCTGGAAGTCCTCCTCGGTCTCGCCCGGGAAACCAACGATGAAGTCCGAGGACAG
CGTCAGGCTGGGGCGCGCAGCGCGCAGGCGGCGCACCACGGACTTGAACTCCAGCGCGGTGTAGCCGCGCTTCAT
GGCCGCCAGCACCCGGTCGCTGCCGGCCTGCACCGGCAGGTGCAGGAACGACACCAGCTTGGGCAGCCGTGCGTA
GGCGTCGACCATGCGCTGGGTCATTTCCTTCGGATGCGAGGTGGTGTAGCGGATCCGTTCGATACCGGGAATCTC
GTGCACGTATTCCAGCAGCATGGCGAAATCGGCGATTTCGCCGCTGTCGCCCATGGCGCCGCGGTAGGCGTTGAC
GTTCTGGCCCAGCAGCGTGACTTCCTTGACGCCCTGGTCGGCCAGGTCGGCGACCTCGAGCAGGACGTCGTCGAA
GGGGCGCGACACTTCTTCGCCGCGCGTGTAGGGCACCACGCAGAAGCTGCAATACTTGCTGCAGCCTTCCATGAT
GGACACGAACGCGGTGGCGCCGTCGACGCGCGGCGGGGGCAGGGCGTCGAACTTCTCGATCTCGGGGAAGCTGAT
GTCGACCTGCGACACGCCCTGGGCGCGGCGGCGCTTGATCAGGTCGGGCAGCCGGTGCAGGGTCTGCGGGCCGAA
CACCACGTCGACATAGGGCGCGCGCTTGACGATGGCCTCGCCTTCCTGGCTGGCCACGCAGCCGCCCACGCCGAT
CACCAGGTTGGGGTTCTGCTTCTTGAGGTGCTGTACCCGGCCCAGGTCGGAGAACACCTTCTCCTGCGCCTTCTC
GCGCACGGAACAGGTGTTGAACAGGATGACATCGGCATCCTCGGGGTTGTCGGTCAGCTCCAGGCCCTGGTCGGC
GCGCAGCACGTCGGCCATCTTGTCCGAGTCGTACTCGTTCATCTGGCAGCCGAAGGTGCGGATATACAA

314. ***Bordetella parapertussis*** **(SEQ ID NO. 314)**

TCATTCGGCTCCGGATGTGTCGCGTTCGATGCCGGCGACACGGCCGCGCAGCGAGTTGGTGTGGGCGTGGGTGAC
GACGACGTCGACCATGTGGCCGATCAGGCGCGGCACGCCGGGAAAGTTGACGATACGGTTGTTCTCGGTACGGCC
CATCAGCTCGTTGGGGTCGCGCCGCGAAGGGCCTTCGACCAGCACGCGCTGGCGGGTGCCGATCATGCCCTGGGC
GATGGCCGCGGCCTGCTGGTTGATGAGCGCCTGCAACTGCTGCAGGCGGCGCAGCTTGACGTCCTGCGGCGTGTC
ATCGTGCAGGTCGGCGGCCGGCGTGCCGGGCCGGCGCGAATACACGAACGAGAACGAGGTGTCGAAGCCGACGTC
CTCGATCAGCTTCATGGTCTTCTGGAAGTCCTCCTCGGTCTCGCCCGGGAAACCGACGATGAAGTCCGAGGACAG
CGTCAGGCTGGGGCGCGCAGCGCGCAGGCGGCGCACCACGGACTTGAACTCCAGCGCGGTGTAGCCGCGCTTCAT
GGCCGCCAGCACCCGGTCGCTGCCGGCCTGCACCGGCAGGTGCAGGAACGACACCAGCTTGGGCAGCCGTGCGTA
GGCGTCGACCATGCGCTGGGTCATTTCCTTCGGATGCGAGGTCGTGTAGCGGATCCGTTCGATACCGGGAATCTC
GTGCACGTATTCCAGCAGCATGGCGAAATCGGCGATTTCGCCGCTGTCGCCCATGGCGCCGCGGTAGGCGTTGAC
GTTCTGGCCCAGCAGCGTGACTTCCTTGACGCCCTGGTCGGCCAGGTCGGCGATCTCGAGCAGGACGTCGTCGAA
GGGCCGCGACACTTCTTCGCCGCGCGTGTAGGGCACCACGCAGAAGCTGCAATACTTGCTGCAGCCTTCCATGAT
GGACACGAACGCGGTGGCGCCGTCGACGCGCGGCGGGGGCAGGGCGTCGAACTTCTCGATCTCGGGAAAGCTGAT
GTCGACCTGGGACACGCCCTGGGCGCGGCGGCGCTTGATCAGGTCGGGCAGCCGGTGCAGGGTCTGCGGGCCGAA
CACCACGTCGACATAGGGCGCGCGCTTGACGATGGCCTCGCCCTCCTGGCTGGCCACGCAGCCGCCCACGCCGAT
CACCAGGTTGGGGTTCTGCTTCTTGAGGTGCTGTACCCGGCCCAGGTCGGAGAACACCTTCTCCTGCGCCTTCTC
GCGCACGGAACAGGTGTTGAACAGGATGACATCGGCATCCTCGGGGTTGTCGGTCAGCTCCAGGCCCTGGTCGGC
GCGCAGCACGTCGGCCATCTTGTCCGAGTCGTACTCGTTCATCTGGCAGCCGAAGGTGCGGATATACAATTTGCC
CAGGCCCTGGGCGGTGGTGGCCGGCGTGCCGGCATCGGACGGGCTGGCGCCGTCGCGTTTGACAGTGGTTTCTTG
CAT

315. ***Burkholderia pseudomallei*** **(SEQ ID NO. 315)**

TCAGTGCGTGGCGGCGCTCGCGTCGCCGTGCGCGAGCACGAGCTCGCCGCGCAGCGAGTGGGGATACGCGTGATT
GATCTTCACGTCGATCATCTGGCCGATCAGGCGCGGGTGCGCGGCGCTCGGCGCGGGAAAATTCACGACCCGGTT
GTTCTCGGTGCGGCCCGCGAGCTCGTTCGGATCCTTGCGCGACGGCCCCTCGACGAGGATTCGCTCGACCTTGCC

GAGCATCGACTGGCTGATCCTCGCGACGTTCTCCTCGATCGTCGCCTGCAGATGTTGCAGGCGCTTGAGCTTGAG
CTCGCGCGGCGTGTCGTCGGCGAGATTCGCGGCCGGCGTGCCGGGCCGCGGGCTGTAGATGAACGAGAAGCTCGT
GTCGTAGCTCATCTCGTGAACGAGCGCCATCGTCTTGTCGAAGTCGGCGTCGGTCTCGCCGGGGAAACCCACGAT
GATGTCCGTGGACAGCGACAGATTCGGGCGGATCGCGCGCAGCTTGCGGATCACCGATTTGTATTCGAGCACGGT
GTAGCCGCGCTTCATCGCCATCAGGATGCGGTCCGAGCCGTGCTGGACGGGCAGGTGCAGATGGTCGACGAGCTT
CGGCACCTTCGCGTAGACGTCGAGCAGGCGCTGCGTGAACTCCTTCGGATGCGATGTCGTGTAGCGGATCCGCTC
GATGCCGGGGATGTCGGCGACATATTCGATCAGCGTCGCGAAATCGGCGATCTCGGCCGAGCCGGCCGCGATCGC
GCCGCGGTAGGCGTTCACGTTCTGGCCGAGCAGCGTGACTTCGCGCACGCCCTGGTCGGCGAGGCCCGCGACCTC
GGTCAAGACGTCGTCGAGCGGGCGCGACACTTCATCGCCGCGCGTGTACGGCACGACGCAGTAGCTGCAGTACTT
CGAGCAGCCTTCCATGATCGACACGAACGCGCTCGGCCCTTCGACGCGAGCGGGCGGCAGATGGTCGAACTTCTC
GATTTCGGGGAACGTGATGTCGACCTGCGCGCGGCCGCTTTCGCGGCGCGCGTCGATCATCTGCGGCAGGCGGTG
CAGCGTTTGCGGGCCGAACACGAGATCGACGTACGGCGCGCGCGCGACGATCGACGCGCCTTCCTGGCTCGCCAC
GCAGCCGCCGACGCCGATCAGCAGGTCCGGCTTCGCTTCCTTCAGCTCGCGCACGCGGCCGAGATCGGAGAACAC
CTTCTCCTGCGCCTTTTCTCGCACCGAGCAGGTGTTGAACAGGATGATGTCCGCGTCTTCCGGGGTGTCGGTTTT
CTCGAGGCCCTCGGCCGCATTGAGCACGTCGACCATCTTGTCGGAGTCGTACTCGTTCATCTGGCAGCCGAAGGT
TTTTACGTAAACTTTCTTGGTCAT

316. Vibrio vulnificus (SEQ ID NO. 316)

TTATGGCGTAAATGTCGCTACACCTAGCTCATCTTCGCGGCGTGTTTTGGCCATCATTTGTGTTGGCGAAATCAC
GCTACGTAGGTCCATATCTTTTTCAGTACGTACAATCTCACCACGCAGTGAGTTCGCAAATACATCGGTAATTTT
CACATCAACGAACTGACCAATCAGATCTGCGCTACCTTCAAAGTTTACTACACGGTTGTTTTCTGTACGAGCACG
TAGCTCCATCAAGTTCTTCTTAGAAGGGCCTTCAACCAGTACACGCTGCTCTGTGCCTAGCATGAGGCGAGAGTA
ACGCATGGCTTGTGCGTTGATTTGTTGTTGCAGTTCGTACAAGCGCTCTTTCTTCGTCTCTTCTGAAAGATCACA
TGGGTAATCTGCCGCAGGAGTACCAGGGCGAGGAGAGAAGATGAAGCTGAAGCTCATGTCAAAGTCGACATCTTT
GATCAGCTTCATGGTGTCTTGGAAATCTTTGTCGCTTTCACCTGGGAAGCCAACAATAAAGTCAGAACTGATTTG
GATATCAGGACGCGCTTTACGCAGTTTACGAATGATCGACTTGTATTCGATGCCAGTGTGAGGACGCTTCATCAT
CGTCAGAATGCGATCGCTACCACTTTGTACTGGTAGATGAAGGAAGCTCACCAGCTCTGGCGTATCTTCGTAGAC
AGCGATGATATCATCGGTGAACTCAAGTGGGTGGCTGGTGGTAAAGCGAATACGGTCGATACCATCGATAGACGC
AACAAGGCGAAGCAGTTCTGCAAAAGAACAGATTTCACCATCGTGCGTTGGGCCACGGTATGCGTTTACGTTTTG
GCCTAGCAGGTTGACTTCGCGAACACCTTGCTCGGCAAGTTGCGCGATTTCGTAAAGCACATCGTCCATTGGGCG
GCTGACTTCTTCACCACGAGTGTAAGGCACTACGCAGTAAGTACAGTACTTAGAACAGCCTTCCATGATAGAAAC
GAATGCGGTTGCGCCTTCTGCACGTGGTTCTGGCAGACTGTCAAACTTCTCGATTTCTGGGAATGAAATGTCCAT
CACTGGTGCATCTTCACTTTGTGATTGTTTGATCATTTCAGGAAGACGGTGCAAGGTTTGCGGGCCAAAGATAAC
GTCAACAAAAGGTGCACGTTCACGAATGTGATCGCCTTCCTGTGTTGCTACACAACCACCAACACCGATCACGAC
GCCTGGCTTTTTATCTTTGAGTGTTTTCCAACGGCCAAGCTGGTGGAACACTTTTTCTTGCGCCTTTTCACGGAT
CGAACAGGTGTTAAGTAATAGAACATCTGCTTCTTCTGGTTCTTCTGTCAATTCGTAGCCATTTGCTGCGTTCAG
CAGATCCGCCATTTTCGATGAATCGTATTCGTTCATCTGGCAACCCCAGGTTTTAATTAGCAGTTTCTTACTCAT

317. Vibrio fischeri (SEQ ID NO. 317)

CTATGGCGTAAAAGTACCTACACCAAGATCATCTTCACGACGTGTCTTTTCCATCATTTCTGCTGGAGTCATAAC
AACACGTAAACCCATGTCTTTTTCTGTACGAACTAGTTCACCACGCAGTGAGTTCGCAAATACATCTGTGATTTT
AACATCAACAAATTGACCAATAAGATCCGCTGAACCTTCAAAGTTTACAACACGGTTGTTTTCAGTACGAGCACG
AAGTTCCATCAGGTTTTTCTTCGATGGGCCTTCAACTAATACACGTTGCTCAGTGTCTAGCATTAGACGAGAGTA
GCGCATTGCTTGGCTGTTTACTTGCTGTTGCAGTTCAGCTAGGCGATCTTTCTTCTCTTGTTCAGGGATATCACA
TGGATAATCAGCAGCAGGTGTTCCTGGACGCGCAGAGAAGATGAAACTAAAGCTCATGTCGAAGTCGACATCTTT
AATCAGTTTCATTGTATCTTGGAAGTCTTTCGCCGTTTCACCAGGGAAGCCAACAATAAAGTCAGAACTGATTTG
AATATCAGGACGAGCCTTACGTAATTTACGAATGATTGATTTGTATTCAATCGCTGTGTGAGGGCGCTTCATCAT
AGTTAGAATACGATCAGAACCACTTTGAACAGGTAAGTGTAAGAAACTTACTAGCTCTGGCGTATCTTCGTATAC
AGCGATGATGTCATCACCAAACTCTAATGGGTGGCTTGTTGTAAAGCGTAAACGGTCGATACCATCGATAGATGC
AACCATACGTAATAATTCAGCAAATGTGCAGATATCACCGTCGTGCATTGGACCACGGTACGCGTTAACGTTTTG
ACCCAATAGGTTTACTTCACGTACGCCTTGCTCTGCAAGCTGTGCAATTTCAAATAATACGTCATCAAGAGGACG
GCTTACTTCTTCACCACGAGTGTATGGAACAACACAGTAAGTACAGTACTTAGAACACCCTTCCATAATAGAAAC
GAACGCTGTTGCACCTTCTGCTTTTGGTTCAGGAAGGTTATCGAACTTTTCGATCTCTGGGAATGAAATATCCAT
TACTGGTTTTTCATTTGATTGAGATTGGCGGATCATTTCAGGTAAACGGTGTAAAGTTTGTGGACCAAAAATTAC
GTCAACGTATGGAGCTCGTTGGCGAATATGATCACCTTCTTGAGTTGCAACACAACCACCAACACCGATCACTAG
ATCTGGTTTTTTATCTTTTAGGTTTTTCCAGCGGCCTAATTGGTGAAACACTTTCTCTTGTGCTTTTTCACGAAT
AGAGCAGGTATTTAATAGTAGAACGTCAGCTTCTGTTGGTTCTTCTGTTAATTCATAACCATTTGCGGCACCTAA
AAGGTCGGCCATTTTAGATGAATCGTATTCGTTCATCTGACAGCCCCAGGTTTTGATCAGCAGTTTCTTAGTCAT

318. Yersinia pseudotuberculosis (SEQ ID NO. 318)

TTAAGGCTGATAAATACCTACACCAATTTCATTTTCTTTACGGGTGCGAGCAATCACCGATTGCGGTGACTCGTG
GGTTCGCAGGTCCATCTGATCTTCTGTACGCAGTAAAATGCCGCGCAGTGAACTGGCATAAACGTTAACAATTTC
GACATCAACGAATTTACCAATCATGTCGGGTGAACCCTCAAAGTTCACGACGCGGTTGTTTTCCGTACGCCCGGC
CAGTTCCATGACATTTTTGCGAGAGGTCCCCTCCACCAAAACACGCTGTACTGTCCCTACCATCTTACGGCTAAT
TTCCATCGCCTGTTGGCTAATGCGTTGTTGCAGGATATGTAGCCGCTGTTTTTTCTCCTCTTCGGACACATTGTC
GGGTAAATCAGCCGCTGGTGTGCCGGGACGCGGGGAGTAAATAAAGCTGTAGCTGGTATCAAAATGAATATCTGC
GACCAGTTTCATGGTCTGTTCAAAATCCTGCTGGGTTTCACCAGGGAAGCCGACAATAAAATCAGAACTTATCTG
GATATCAGGGCGCGCCTGACGCAGTTTGCGGATGATGGCTTTGTATTCCAGGGCGGTATGGGCACGCTTCATCAT
GGTCAAAATACGGTCAGAACCGCTTTGTACCGGCAAATGCAGGAAGCTCACCAATTCAGGCGTATCGCGATAAAC
ATCAATGATATCGTCAGTAAACTCAATGGGGTGGCTGGTGGTAAATCGTATCCTATCGATACCATCAATGGCCGC
AACCAAACGCAACAGCTCGGCAAAACTACAGATATCGCCATCGTAGGTTGCCCCGCGGTAGGCGTTAACATTCTG
GCCGAGTAAGTTGACTTCACGTACGCCTTGAGCGGCTAACTGGGCGATTTCAAAAAGAATGTCATCGCTTGGACG
GCTGACTTCCTCGCCTCGGGTGTAGGGTACGACACAGAATGTACAATATTTATTGCAGCCTTCCATGATCGAAAC
AAACGCAGTTGGGCCTTCAGCCCGTGGTTCTGGCAAACGGTCAAATTTTTCAATTTCGGGAAAACTGATATCCAC
GACAGGGCTATTCGTTCCTTGCACGTGGTTAATCATTTCCGGTAAACGATGCAGCGTTTGTGGCCCGAAGATGAC
ATCGACACAGGGGGCGCGCTGGCGCAATTGTTCACCTTCCTGTGACGCCACGCAACCACCGACCCCAATAATCAA
CTGCGGGTTTTTCTCTTTCAATAATTTCCATTGCCCTAGCAGGCTGAATACTTTTTCCTGTGCTTTTTCCCGGAT

AGAACAGGTATTTAGCAGCAGTAAATCCGCTTCTTCCGGGATGGTGGTTAACTGGTAGCCATGGGTACTGGCCAA
GAGATCTGCCATTTTAGATGAATCGTATTCATTCATCTGGCAACCCCAGGTTTTGATATGCAGTTTTTTAGTCAT

319. ***Salmonella enterica subspecies paratyphi A***
(SEQ ID NO. 319)

TTAAGGCTGGTAGAATCCTACGCCCAGCTCATTTTCTTTACGGGTACGGGCAATGACGGACTCCGGCGTTTCGGC
GACGCGCAGCCCCATTTCATCTTCGGTACGCACCACTTTTCCGCGCAGGGAGTTCGGATAGACGTCAGTAATTTC
CACATCGACAAACTTACCAATCATCTCCGGCGTGCCTTCAAAGTTCACCACCCGATTGTTTTCGGTACGGCCAGA
CAGTTCCATAATGTTTTTACGTGACGTGCCTTCCACCAGAATGCGCTGTGTCGTGCCGAGCATACGGCGGCTCCA
TGCCATCGCCTGCTGATTGATACGCTCTTGCAGAATATACAGACGCTGCTTTTTCTCTTCTTCCGGTACGTCATC
AACCATATCGGCAGCCGGCGTTCCCGGACGCGCAGAGAAGATAAAGCTGTAGCTCATATCAAAGTTGACGTCAGC
GATAAGCTTCATGGTTTTTTCGAAATCATCGGTAGTTTCGCCAGGGAATCCGACGATAAAGTCAGAGCTTATCTG
AATGTCCGGCCGCGCCGCGCGCAGTTTACGGATGATTGCTTTATATTCCAGCGCAGTGTGGGTGCGCCCCATCAG
ATTCAACACGCGATCGGAACCGCTCTGTACCGGCAGATGCAGGAAACTGACCAGCTCCGGCGTATCGCGGTACAC
CTCGATAATATCGTCGGTGAACTCAATCGGATGGCTGGTGGTAAAGCGAATACGGTCAATGCCGTCGATGGCGGC
AACCAGACGCAGCAGATCGGCAAAGGTGCCAGTGGTGCCGTCGTAGTTTTCTCCGCGCCAGGCGTTAACGTTCTG
GCCCAACAGGTTGACCTCACGCACGCCCTGCGCCGCTAACTGGGCGATTTCGAACAGGATATCGTCTGAGGGACG
GCTGACTTCTTCACCGCGGGTATACGGCACCACGCAGTAAGTACAATATTTATTGCAGCCTTCCATGATAGAAAC
GAAAGCGGTCGGGCCTTCTGCGCGCGGTTCCGGCAAACGGTCGAACTTCTCGATTTCCGGGAAGCTGATATCGAC
CACCGGGCTGCGGTCGCCACGCACGGAGTTAATCATCTCCGGCAGGCGGTGTGAGGTTTGCGGACCAAAAATAAT
GTCGACGTAATGGGCGCGTTGACGAATGTGCTCGCCTTCCTGGGAAGCCACGCAGCCGCCGACGCCGATAATCAG
ATCGGGATTTTTCTCTTTTAACAGTCTCCAGCGACCTAATTGATGGAAGACTTTTTCCTGAGCCTTCTCGCGGAT
TGAGCAGGTATTCAACAGCAGCACATCCGCCTCTTCCGCCACGTCGGTCAGTTGATAGCCGTGGGTGGCGTCCAG
CAGATCGGCCATCTTCGATGAATCGTACTCGTTCATCTGACAGCCCCAGGTTTTAATATGGAGTTTTTTAGTCAT
CGACTTGCTCTTGCGAAATAGTGGCTGAAAAGCAGGGCGCAT

320. ***Salmonella typhimurium*** **(SEQ ID NO. 320)**

TTAAGGCTGGTAGAATCCTACGCCCAGCTCATTTTCTTTACGGGTACGGGCAATGACGGACTCCGGCGTTTCGGC
GACGCGCAGCCCCATTTCATCTTCGGTACGCACCACTTTTCCGCGCAGGGAGTTCGGATAGACGTCAGTAATTTC
CACATCGACAAACTTACCAATCATCTCCGGCGTGCCTTCAAAGTTCACCACCCGATTGTTTTCGGTACGGCCAGA
CAGTTCCATAATGTTTTTACGCGACGTGCCTTCCACCAGAATGCGCTGTGTCGTGCCGAGCATACGGCGGCTCCA
TGCCATCGCCTGCTGATTGATACGCTCTTGCAGAATATACAGACGCTGCTTCTTCTCTTCTTCCGGCACGTCATC
AACCATATCGGCAGCCGGCGTTCCCGGACGCGCAGAGAAGATAAAGCTGTAGCTCATATCAAAGTTGACGTCAGC
GATAAGCTTCATGGTTTTTTCGAAATCATCGGTAGTTTCGCCAGGGAATCCGACGATAAAGTCAGAGCTTATCTG
AATGTCCGGCCGCGCCGCGCAGTTTACGGATGATTGCTTTATATTCCAGCGCAGTGTGGGTGCGCCCCATCAG
ATTCAACACGCGATCGGAACCGCTCTGTACCGGCAGATGCAGGAAACTGACCAGTTCCGGCGTATCGCGGTATAC
CTCGATAATATCGTCGGTGAACTCAATCGGATGGCTGGTGGTAAAGCGAATACGGTCAATGCCGTCGATGGCGGC
AACCAGACGCAGCAGATCGGCAAAGGTACCGGTGGTGCCGTCGTAGTTTTCTCCGCGCCAGGCGTTAACGTTCTG
GCCCAGCAGGTTGACCTCACGCACGCCCTGCGCCGCTAACTGGGCGATTTCGAACAGGATATCGTCTGAGGGACG
GCTGACTTCTTCACCGCGGGTATACGGTACCACACAGTAAGTACAATATTTATTGCAGCCTTCCATGATAGAAAC

GAAAGCGGTCGGGCCTTCTGCGCGCGGTTCCGGCAAACGGTCGAACTTCTCGATTTCCGGGAAGCTGATATCGAC
CACCGGGCTGCGGTCGCCACGCACGGAGTTAATCATCTCCGGTAGGCGGTGTAAGGTTTGCGGGCCAAAAATAAT
GTCGACGTAATGGGCGCGTTGACGAATGTGCTCGCCTTCCTGGGAAGCCACGCAGCCGCCGACGCCGATAATCAG
ATCGGGATTTTTCTCTTTTAACAGTCTCCAGCGACCTAATTGATGGAAGACTTTTTCCTGAGCCTTCTCGCGGAT
TGAGCAGGTATTCAACAGCAGCACATCCGCCTCTTCCGCCACGTCGGTCAGTTGATAGCCGTGGGTGGCGTCCAG
CAGATCGGCCATCTTCGATGAATCGTACTCGTTCATCTGACAGCCCCAGGTTTTAATATGGAGTTTTTTAGTCAT

321. Shigella flexneri (SEQ ID NO. 321)

TTACGGCTGATAATAACCCACGCCAAGGTCGTTTTCTTTGCGGGTGCGGGCAATCACCGACTCCGGTGTTTCTGC
CATGCGCAGACCCATTTCATCTTCAGTTCGCACCACTTTACCGCGCAGAGAGTTCGGGTAGACGTCGGTAATTTC
TACATCGACGAATTTACCGATCATATCCGGTGTGCCCTCGAAGTTGACCACGCGGTTATTTTCGGTACGCCCGGA
AAGCTCCATGATGCTCTTACGCGAAGTCCCTTCTACCAGAATACGCTGGGTGGTGCCGAGCATCCGACGGCTCCA
TGCCATCGCTTGCTGATTGATACGTTCTTGCAGAATATACAGACGCTGCTTCTTCTCTTCTTCCGGAACATCATC
AACCATATCGGCGGCAGGCGTTCCTGGACGTGCAGAGAAGATAAAGCTGTAGCTCATGTCGAAATTGACGTCGGC
AATCAGCTTCATCGTTTTCTCGAAGTCTTCGGTGGTTTCGCCAGGGAAGCCAACAATGAAGTCAGAACTGATCTG
AATATCCGGACGCGCCGCACGCAGTTTACGGATGATCGCTTTGTACTCCAGCGCCGTATGGGTACGTCCCATCAG
GTTCAGAATGCGATCGGAACCGCTCTGTACCGGCAGATGCAGGAAGCTCACCAGCTCAGGCGTGTCGCGGTACAC
TTCGATGATATCGTCGGTGAATTCGATCGGATGGCTGGTGGTAAAGCGAATACGATCGATCCCGTCGATCGCAGC
AACCAGACGCAACAGATCGGCAAACGATCCGGTGGTGCCGTCGTAGTTCTCACCACGCCAGGCATTCACATTCTG
ACCGAGCAGGTTGACTTCACGCACGCCCTGAGCCGCAAGCTGGGCAATCTCAAACAGAATATCGTCAGACGGACG
GCTTACCTCTTCACCACGGGTGTAAGGCACCACGCAGTAGGTGCAATATTTATTGCAGCCTTCCATGATGGAGAC
AAACGCGGTCGGCCCTTCGGCGCGCGGTTCCGGCAGACGGTCAAACTTCTCGATTTCCGGGAAGCTGATATCTAC
AACCGGGCTGCGGTCGCCGCGCACGGAGTTGATCATCTCCGGCAGACGGTGCAGCGTTTGCGGCCCAAAAATAAT
ATCGACATAGTGGGCGCGCTGGCGAATGTGCTCGCCTTCTTGCGATGCCACGCAGCCACCGACGCCGATAATCAG
GTCTGGATTCTTCTCTTTTAACAGTTTCCAGCGACCCAACTGATGGAAGACTTTTTCCTGAGCCTTCTCGCGGAT
TGAGCAGGTGTTCAGCAGTAGCACATCCGCTTCTTCCGCCACGTCGGTCAGTTGATAGCCGTGGGTGGCATCCAG
CAGATCGGCCATCTTCGATGAATCGTACTCGTTCATCTGACAGCCCCAGGTTTTAATATGGAGTTTTTTGGTCAT

322. Pseudomonas syringae (SEQ ID NO. 322)

TTACTGTAGCAGCGAGCCACGCAACGAGTGGGGCTGCGCATCATCAATGTGTACGTCGGCAAACTGCCCGATCAG
GCGGGGATTGTCGCAGCGAAAATTGACAATCCGGTTGTTCTCGGTGCGACCTTGCAGTTCGCCGGGGTCTTTCTT
TGAGTAATCTGTAACCAGAATACGCTGGATGCTGCCAACCATCTGTCGGCTGATCTCGAAACCCTGTTGGTTCAG
GCGATGTTGCAACGCGGCCAGTCGCTCTTTTTTCAGCGCTTCCGGCGTGTCGTCTTTCAGGTCAGCGGCCGGTGT
GCCGGGGCGCGGGCTGTAAATGAACGAGAACGAGAAGTCGAAACCGGCGTCTTCGATCAGCTTCATGGTGTTGTC
GAAATCCTTTTCGGTTTCACCGGGGAAGCCAACGATGAAGTCGGAACTGATGCTGATACCCGGCACTGCCGCCCG
AAGCTTGCGTAGCCTGGACTTGTATTCCAGCGTGGTGTGGTTGCGTTTCATGGCCGCCAGAATGCGGTCCGAACC
TGACTGCACCGGCAAATGCAGGTGCTTGACCAGTTCCGGCACGTCGGCGTGCGCCTGAATCAGGCTGTCGGAAAA
CTCGAGCGGGTGCGAGGTTGTGTAACGAATGCGGTCGATGCCATCGACGACGGCAACTGCCCGAATCAGATCAGC
CAAGTCGGCGACTCGCCCGTCATGGGTGGTGCCGCGATAACCGTTGACGTTCTGCCCCAGCAGTGTGACTTCGCG
CACGCCGTGTTCGGCCAGGTGAGTGACCTCGGTCAGCACGTCATCGAACGGTCGGCTGACTTCTTCGCCGCGCGT

GTAGGGCACCACGCAGAAGGTGCAGTACTTGCTGCAGCCTTCCATCACCGACACGTAAGCACTCGGGCCATCCAC
GCGCGGCTCGGGCAAGTGGTCGAATTTTTCGATCTCGGGGAATGAAACATCGACCTGCGGCAAGCGGGTGATGCG
CGCTGCGTCGATCATTTCCGGCAGGCGGTGCAATGTTTGCGGGCCGAACACCACGTCCACGTAGGGCGCGCGGTC
GCGGATGGCCGCGCCTTCCTGGCTGGCAACACAGCCGCCGACGGCAATCACCATCTCGGGGTTGGCCAGTTTCAG
CTCACGCCAGCGGCCGAGCTGCGAATAGACCCGGTCTTGCGCACGCTCGCGAATCGAGCAGGTGTTGAGCAGGAT
CACGTCGGCGTCTTCCGCGCGAGCGGTGACTTCCAGAGCCTGATGTTCGCCCAGCAGATCGACCATGCGCGAGCT
GTCGTACTCGTTCATCTGGCAACCGTGGGTTTCGATGTAAAGCTTCTTGGCCAT

323. ***Burkholderia mallei*** **(SEQ ID NO. 323)**

TCAGTGCGTGGCGGCGCTCGCGTCGCCGTGCGCGAGCACGAGCTCGCCGCGCAGCGAGTGCGGATACGCGTGATT
GATCTTCACGTCGATCATCTGGCCGATCAGGCGCGGGTGCGCGGCGCTCGGCGCGGGAAAATTCACGACCCGGTT
GTTCTCGGTGCGGCCCGCGAGCTCGTTCGGATCCTTGCGCGACGGCCCCTCGACGAGGATTCGCTCGACCTTGCC
GAGCATCGACTGGCTGATCCTCGCGACGTTCTCCTCGATCGTCGCCTGCAGATGTTGCAGGCGCTTGAGCTTGAG
CTCGCGCGGCGTGTCGTCGGCGAGATTCGCGGCCGGCGTGCCGGGCCGCGGGCTGTAGATGAACGAGAAGCTCGT
GTCGTAGCTCATCTCGTGAACGAGCGCCATCGTCTTGTCGAAGTCGGCGTCGGTCTCGCCGGGGAAACCCACGAT
GATGTCCGTGGACAGCGACAGATTCGGGCGGATCGCGCGCAGCTTGCGGATCACCGATTTGTATTCGAGCACGGT
GTAGCCGCGCTTCATCGCCATCAGGATGCGGTCCGAGCCGTGCTGGACGGGCAGGTGCAGATGGTCGACGAGCTT
CGGCACCTTCGCGTAGACGTCGAGCAGGCGCTGCGTGAACTCTTTCGGATGCGATGTCGTGTAGCGGATCCGCTC
GATGCCGGGGATGTCGGCGACATATTCGATCAGCGTCGCGAAATCGGCGATCTCGGCCGAGCCGGCCGCGATCGC
GCCGCGGTAGGCGTTCACGTTCTGGCCGAGCAGCGTGACTTCGCGCACGCCCTGGTCGGCGAGGCCCGCCACCTC
GGTCAAGACGTCGTCGAGCGGGCGCGACACTTCATCGCCGCGCGTGTACGGCACGACGCAGTAGCTGCAGTACTT
CGAGCAGCCTTCCATGATCGACACGAACGCGCTCGGCCCTTCGACGCGAGCGGGCGGCAGATGGTCGAACTTCTC
GATTTCGGGGAACGTGATGTCGACCTGCGCGCGGCCGCTTTCGCGGCGCGCGTCGATCATCTGCGGCAGGCGGTG
CAGCGTTTGCGGGCCGAACACGAGATCGACGTACGGCGCGCGCGCGACGATCGACGCGCCTTCCTGGCTCGCCAC
GCAGCCGCCGACGCCGATCAGCAGGTCCGGCTTCGCTTCCTTCAGCTCGCGCACGCGGCCGAGATCGGAGAACAC
CTTCTCCTGCGCCTTTTCTCGCACCGAGCAGGTGTTGAACAGGATGATGTCCGCGTCTTCCGGGGTGTCGGTTTT
CTCGAGGCCCTCGGCCGCATTGAGCACGTCGACCATCTTGTCGGAGTCGTACTCGTTCATCTGGCAGCCGAAGGT
TTTTACGTAAACTTTCTTGGTCAT

324. ***Legionella pneumophila*** **(SEQ ID NO. 324)**

TTAGGCTGGCTGCATCTCCTTTTCAAGCAGCCTTCCTCGCAATGAATTAGGTAGTGCGTCACTAATTTGGACATC
TATAAATTGTCCAATTAAATGAGGTGGTCCATCAAAATTAACTACACGGTTACATTCAGTACGACCAGATAATTG
CTGTGAACTTTTCTTGGAAAATCCGGTAACCAGAATTTTTTGCTTGCTGCCTATCATTGATTCACTGTAACGAGC
TGCATTCATTAATAATCTGTTTTGTAAAATCTGTAAACGTTGCTTTTTGATCTCCATAGGCGTGTCATCAGGTAA
ATTTGCTGCAGGAGTTCCTGGTCTTGGGCTGTATATAAAGCTGAAAGAGGTATCAAAACCGATTTCATGCACAAG
ATCCATAGTGTCCTGGAAATCTTTGTCTGTCTCTCCGGGAAAGCCTACAATAATGTCAGTAGATAAGCGAATGTC
TGGTCGAATTTTCCTTAATTTACGAATTTTGGATTTAAATTCCAAAGCAGTGTACCCTCGTTTCATTAACGATAA
AATGCGATCGGATCCGCTTTGTACCGGAAGGTGTAAATGATTGGCAAGCTCTGGAACCTCAGCGTAGGCATTAAT
CAAATTTTCAGAAAATGCCAAGGGATGTGATGTTGTGAAACGTATTCTTCCTATTCCATCGATAGCGGCAATATA
ATGAATTAACAGGGCAAGATCGGCTATATCCCCATTGTCCATAATACCTCTGTAATCGTTCACATTTTGGCCTAG

TAAATTAATCTCTCTGACGCCTTGACTGGCTAATTGATAACACTCAGCCAATACATCATCAAATGGTCTGCTGAT
TTCTTCGCCACGGGTGTAGGGCACCACACAGAAGCTGCAATATTTACTACAGCCTTCCATTATAGATACAAAAGC
TGTAGGGCCTTCTGCTCTTGGTGCGGGTAAATGATCAAATTTCTCTATTTCTGGAAAGCTGATATCAACAACAGA
TTTATTTTTCTCAAGCCTTTCATTGAGCAGGGCAGGGAGCCTGTGTAATGTCTGTGGCCCAAATACGATATCAAC
AAACGGTGCTCTTTTTATGATGTCTGAGCCTTCCTGGCTCGCTACGCATCCTCCCACTCCAATGAGCACATGAGG
GTTTTTGGCTTTATATTCTCGCCATTGACCCAGTTGAGAAAAAACTTTTTCCTGTGCTTTTTCTCGAATTGAGCA
TGTGTTTAATAAAATAACATCGGCATCCTCGACTTGATCAGTTTTGACCAAACCATGGGAAGCGTAAAGTACTTC
TGCCATTTTAGAAGAATCGTATTCATTCATTTGGCAGCCATTTGTTTTAATATATAATTTTTTAACCAT

325. ***Bordetella bronchiseptica*** **(SEQ ID NO. 325)**

TCATTCGGCTCCGGATGTGTCGCGTTCGATGCCGGCGACACGGCCGCGCAGCGAGTTGGTGTGGGCGTGGGTGAC
GACGACGTCGACCATGTGGCCGATCAGGCGCGGCACGCCGGGAAAGTTGACGATACGGTTGTTCTCGGTACGGCC
CATCAGCTCGTTGGGGTCGCGCCGCGAAGGGCCTTCGACCAGCACGCGCTGGCGGGTGCCGATCATGCCCTGGGC
GATGGCCGCGGCCTGCTGGTTGATGAGCGCCTGCAACTGCTGCAGGCGGCGCAGCTTGACGTCCTGCGGCGTGTC
ATCGTGCAGGTCGGCGGCCGGCGTGCCGGGCCGGCGCGAATACACGAACGAGAACGAGGTGTCGAAGCCGACGTC
CTCGATCAGCTTCATGGTCTTCTGGAAGTCCTCCTCGGTCTCGCCCGGGAAACCGACGATGAAGTCCGAGGACAG
CGTCAGGCTGGGGCGCGCAGCGCGCAGGCGGCGCACCACGGACTTGAACTCCAGCGCGGTGTAGCCGCGCTTCAT
GGCCGCCAGCACCCGGTCGCTGCCGGCCTGCACCGGCAGGTGCAGGAACGACACCAGCTTGGGCAGCCGTGCGTA
GGCGTCGACCATGCGCTGGGTCATTTCCTTCGGATGCGAGGTCGTGTAGCGGATCCGTTCGATACCGGGAATCTC
GTGCACGTATTCCAGCAGCATGGCGAAATCGGCGATTTCGCCGCTGTCGCCCATGGCGCCGCGGTAGGCGTTGAC
GTTCTGGCCCAGCAGCGTGACTTCCTTGACGCCCTGGTCGGCCAGGTCGGCGACCTCGAGCAGGACGTCGTCGAA
GGGCCGCGACACTTCTTCGCCGCGCGTGTAGGGCACCACGCAGAAGCTGCAATACTTGCTGCAGCCTTCCATGAT
GGACACGAACGCGGTGGCGCCGTCGACGCGCGGCGGGGGCAGGGCGTCGAACTTCTCGATCTCGGGAAAGCTGAT
GTCGACCTGCGACACGCCCTGGGCGCGGCGGCGCTTGATCAGGTCGGGCAGCCGGTGCAGGGTCTGCGGGCCGAA
CACCACGTCGACATAGGGCGCGCGCTTGACGATGGCCTCGCCCTCCTGGCTGGCCACGCAGCCGCCCACGCCGAT
CACCAGGTTGGGGTTCTGCTTCTTGAGGTGCTGTACCCGGCCCAGGTCGGAGAACACCTTCTCCTGCGCCTTCTC
GCGCACGGAACAGGTGTTGAACAGGATGACATCGGCATCCTCGGGGTTGTCGGTCAGCTCCAGGCCCTGGTCGGC
GCGCAGCACGTCGGCCATCTTGTCCGAGTCGTACTCGTTCATCTGGCAGCCGAAGGTGCGGATATACAATTTGCC
CAGGCCCTGGGCGGTGGTGGCCGGCGTGCCGGCATCGGACGGGCTGGCGCCGTCGCGTTTGACAGTGGTTTCTTG
CAT

Figure 14 represents marker I (purA) sequences amplified from different Gram-positive bacteria (SEQ ID NOs 326-359)

326 Enterococcus faecalis (SEQ ID NO. 326)

CTATTTGAAGGGCGCAAGGTGTCATGTTGGATATCGATCAAGGAACCTATCCATTTGTTACTTCCTCTAATCCAG
TAGCTGGTGGCGTAACTATCGGTAGTGGCGTTGGTCCATCAAAAATTAATAAAGTGGTTGGTGTCTGCAAAGCGT
ACACTTCACGTGTCGGTGACGGCCCATTCCCAACAGAATTATTTGATGAAACAGGAGAAACCATTCGTCGTGTCG
GTAAAGAATACGGAACAACAACAGGACGTCCGCGTCGTGTCGGTTGGTTTGATTCAGTAGTCATGCGTCATTCAA
AACGTGTATCAGGGATTACAAACTTGTCATTAAACTCGATTGACGTGTTAAGTGGTTTAGAAACGGTGAAAATTT
GTACAGCTTATGAACTTGATGGTGAATTAATTTATCATTATCCAGCAAGCTTGAAAGAATTAAGCCGCTGTAAAC
CAGTTTATGAAGAATTACCAGGTTGGTCTGAAGATATCACTGGTTGCAAAACTTTAGCCGATTTACCAGCTAATG
CTCGTAACTATGTGCATCGGATTTCAGAATTAGTTGGTGTGCGCATTTCAACATTCTCAGTAGGGCCAGACC

327 Enterococcus gallinarum (SEQ ID NO. 327)

CTCTTCGAGGTGCGCAAGGAGTTATGCTAGATATTGATCAAGGAACATATCCGTTCGTAACATCCTCAAATCCAG
TAGCTGGTGGAGTAACCATTGGTAGTGGAGTGGGTCCTTCTAAAATCAATAAAGTAGTTGGTGTTTGTAAAGCAT
ATACTTCAAGAGTTGGTGACGGCCCATTCCCAACAGAACTTTTTGATGAAACAGGCAATCAAATTCGTGAAGTTG
GCCGTGAATATGGTACGACAACTGGTCGTCCACGTCGTGTTGGTTGGTTTGACTCTGTTGTCATGCGTCATTCAA
AACGTGTTTCTGGTATCACGAATCTGTCTTTAAATTCAATTGATGTTTTGAGCGGCTTGGAAACTGTAAAAATTT
GTACTGCTTATGAATTAGATGGAGAATTGATTTATCATTATCCTGCAAGTCTAAAAGAATTGAATCGTTGTAAAC
CAGTCTATGAAGAGTTACCAGGCTGGTCAGAAGATATTACTGGATGCAAAACATTAGCTGATCTTCCTGAAAATG
CACGTAACTATGTACATCGTATCTCTGAATTAGTTGGGGTTCGTATCTCAACATTCTCAGTAGGTCCTGACC

328 Enterococcus flavescens (SEQ ID NO. 328)

CTTTTTGAAGGTGCTCAAGGCGTGATGCTGGATATCGACCAAGGAACCTATCCTTTCGTGACATCATCCAACCCC
GTTGCTGGGGGAGTCACTATTGGTAGTGGTGTGGGTCCTTCAAAAATCAACAAAGTCGTTGGTGTCTGCAAAGCT
TACACCTCTCGGGTAGGAGATGGTCCTTTCCCAACGGAACTGTTTGATGAAACAGGTGAACAAATCCGTAAGATC
GGTCGTGAATACGGAACAACGACAGGACGTCCTCGCCGTGTGGGCTGGTTTGATACCGTCGTGATGCGCCATTCA
AAACGTGTTTCAGGGATTACAAACCTATCCCTTAACTCGATCGATGTCTTGAGCGGCTTAGAAACCGTGAAGATC
TGTACGGCTTATGAACTAGACGGCGAATTGATCTATCATTACCCAGCAAGCTTGAAAGAGTTGAACCGCTGCAAA
CCAGTCTACGAAGAACTTCCTGGCTGGTCTGAAGACATTACTGGCTGCAAAACATTAGCAGATCTGCCAGAAAAT
GCACGCAATTACGTTCACCGCATCTCTGAATTAGTCGGTGTCCGCATTTCGACCTTCTCAGTAGGGCCNGACC

329 Streptococcus agalactiae (SEQ ID NO. 329)

CTCTTTGAAGGGCGCAAGGAGTTATGCTCGACATTGATCAAGGAACATACCCATTTGTAACATCTTCCAATCCAG
TAGCAGGTGGTGTCACAATTGGTTCGGGAGTTGGACCAAGTAAAATTAATAAAGTAGTAGGTGTATGTAAAGCTT
ACACTAGCCGTGTTGGTGATGGACCATTCCCAACAGAACTTTTTGATGAGGTTGGTGACCGTATTCGTGAGATTG
GTAAAGAGTATGGTACAACGACCGGTCGTCCTCGTCGCGTTGGATGGTTTGATTCTGTTGTTATGCGTCACAGCC
GTCGAGTATCAGGTATTACTAACCTCTCTCTGAATTCAATTGATGTTCTTTCAGGGCTTGATACGGTGAAAATTT
GTGTGGCTTATGACCTTGATGGGAAACGTATTGACTATTACCCAGCAAGCCTTGAACAGCTAAAACGTTGTAAAC

CAATCTATGAAGAATTACCGGGCTGGTCTGAAGATATTACAGCTTGTCGTAGCTTAGATGATCTTCCAGAAAATG
CACGTAATTACGTTCGCCGTGTTGGCGAATTGGTTGGTGTTCGTATTTCTACTTTNCTCAGTAGGNCCAGGTC

330 ***Streptococcus sanguis*** **(SEQ ID NO. 330)**

CTTTTTGAAGGGGCTCAAGGAGTTATGCTCGACATTGATCAAGGAACATACCCATTTGTAACATCTTCCAATCCA
GTAGCAGGTGGTGTCACAATTGGTTCGGGAGTTGGACCAAGTAAAATTAATAAAGTAGTAGGTGTATGTAAAGCT
TACACTAGCCGTGTTGGTGATGGACCATTCCCAACAGAACTTTTTGATGAGGTTGGTGACCGTATTCGTGAGATT
GGTAAAGAGTATGGTACAACGACCGGTCGTCCTCGTCGCGTTGGATGGTTTGATTCTGTTGTTATGCGTCACAGC
CGTCGAGTATCAGGTATTACTAACCTCTCTCTGAATTCAATTGATGTTCTTTCAGGGCTTGATACGGTGAAAATT
TGTGTGGCTTATGACCTTGATGGGAAACGTATTGACTATTACCCAGCAAGCCTTGAACAGCTAAAACGTTGTAAA
CCAATCTATGAAGAATTACCGGGCTGGTCTGAAGATATTACAGCTTGTCGTAGCTTAGATGATCTTCCAGAAAAT
GCACGTAATTACGTTCGCCGTGTTGGCGAATTGGTTGGTGTTCGTATTTCTACTTTCTCAGTTGGGTCCAGACC

331 ***Enterococcus faecium*** **(SEQ ID NO. 331)**

TTCTTCGAAGGGGCGCAAGGGGTTATGCTGGATATTGACCAAGGGACTTATCCATTTGTAACTTCTTCTAATCCA
GTTGCAGGGGAGTCACCATCGGTTCCGGTGTTGGTCCGAGCAAAATTGACAAGGTAGTTGGTGTCTGCAAGGCCT
ACACCAGTCGGGTCGGAGATGGACCATTCCCAACAGAGCTTTTTGATGAAGTTGGTGACCGCATTCGTGATATCG
GCCACGAATATGGCACTACCACTGGTCGCCCACGTCGGGTAGGTTGGTTTGACTCGGTTGTTATGCGCCATAGCC
GCCGTGTATCAGGGATTACCAATCTTTCGCTTAACTCCATCGATGTCTTGAGTGGTCTGGATACAGTGAAAATCT
GTGTAGCTTATGACTTGGATGGCCAAAGAATCGACCACTACCCAGCTAGTCTGGAACAGCTCAAGCGCTGCAAGC
CGATTTACGAAGAGCTGCCAGGCTGGTCAGAGGACATCACTGGAGTCCGCAGTCTGGAAGACTTGCCAGAAAATG
CCCGTAACTATGTTCGCCGAGTGAGTGAGCTGGTTGGCGTTCGCATTTCTACCTTNCTCAGTAGGGCCAGACC

332 ***Enterococcus durans*** **(SEQ ID NO. 332)**

CTCTTTGAAGGGGCACAAGGTGTGATGTTGGATATCGATCAAGGAACGTATCCATTTGTGACTTCTTCTAATCCG
GTAGCTGGTGGTGTAACGATCGGTAGTGGCGTTGGCCCTTCAAAGATCAATAAAGTCGTTGGTGTATGTAAAGCT
TATACTTCTCGTGTAGGAGATGGCCCATTCCCAACAGAACTATTTGACGAAACAGGTCAACAAATCCGTGAAGTC
GGTCGTGAATATGGTACGACAACAGGTCGACCTCGTCGTGTCGGTTGGTTTGATACAGTCGTGGTGCGCCATTCA
AAACGTGTATCAGGAATCACTAACCTATCATTGAATTCAATCGATGTATTAAGCGGACTAGAAACAGTAAAAATC
TGTACAGCGTATGAATTAGATGGAGAATTGATCTATCATTACCCAGCAAGCCTGAAAGAATTGAAACGTTGCAAA
CCAGTATACGAAGAACTTCCTGGTTGGTCTGAAGATATTACAGCATGTAAAACACTTGCTGAACTACCAGAAAAC
GCCCGTAACTATGTTAGACGTATCTCAGAGCCTGTAGGAGTCCGTATTTCAACATTCTCAGTAGGTCCAGACC

333 ***Streptococcus pyogenes*** **(SEQ ID NO. 333)**

CTATTTGAAGGGGCACAAGGGGTTATGCTTGATATTGACCAGGAACGTACCCATTTGTAACGTCTTCAAACCCAG
TTGCTGGTGGTGTAACCATTGGTTCTGGTGTTGGCCCAAATAAAATCAACAAAGTAGTTGGTGTCTGTAAAGCCT
ACACAAGCCGTGTCGGTGATGGGCCATTCCCTACAGAACTCTTTGATGAAGTGGGTGAGCGCATTCGTGAAGTGG
GTCATGAGTACGGGACAACGACCGGCCGTCCACGTCGTGTCGGTTGGTTTGATTCGGTTGTCATGCGCCACAGTC
GTCGTGTATCAGGTATTACTAACCTCTCTCTGAATTCAATTGATGTTCTTTCAGGGCTTGATACGGTTAAGATTT
GTGTGGCTTATGACCTTGATGGGAAACGTATTGACTATTACCCAGCAAACCTTGAACAACTCAAACGTTGCAAAC

CAATCTATGAAGAATTACCAGGCTGGCAAGAGGACATCACAGGTGTTCGTAGCCTTGATGAGCTTCCTGAAAATG
CCCGCAACTACGTTCGTCGTGTTGGAGAATTGGTTGGCGTTCGCATTTCAACCTTCTCAGTTGGGCCAGACC

334 ***Streptococcus pneumoniae*** **(SEQ ID NO. 334)**

CTATTTGAAGGGGCTCAAGGTGTTATGCTAGATATCGACCAAGGTACTTATCCATTTGTTACGTCATCAAACCCT
GTAGCTGGTGGTGTGACAATTGGTTCTGGTGTCGGTCCAAGCAAGATTGACAAGGTTGTAGGTGTATGTAAAGCT
TATACGAGTCGTGTAGGAGATGGTCCTTTCCCAACTGAGTTGTTTGATGAAGTGGGAGAACGTATCCGTGAAGTG
GGTCATGAATATGGTACAACAACTGGTCGTCCACGTCGTGTAGGTTGGTTTGACTCAGTTGTGATGCGTCATAGC
CGTCGTGTTTCTGGTATTACTAACCTTTCTTTGAACTCTATTGATGTTTTGAGCGGTTTGGATACTGTGAAAATC
TGTGTGGCCTATGATCTTGACGGTCAACGTATTGACTACTATCCAGCTAGTCTTGAGCAATTGAAACGTTGCAAG
CCTATCTATGAAGAGTTGCCAGGTTGGTCAGAAGATATTACCGGAGTTCGCAATTTGGAAGATCTTCCTGAGAAT
GCGCGTAACTATGTTCGTCGTGTGAGTGAATTGGTTGGCGTTCGTATTTCTACTTTTCTCAGTAGGTCCAGGCC

335 ***Streptococcus oralis*** **(SEQ ID NO. 335)**

CTTTTCGAAGGTGCGCAAGGTGTCATGTTGGACATTGATCAAGGGACTTATCCATTTGTTACTTCTTCAAACCCT
GTCGCTGGTGGTGTGACGATTGGGTCTGGTGTTGGTCCAAGTAAGATTGACAAGGTTGTAGGTGTCTGTAAAGCC
TACACAAGTCGTGTAGGAGATGGACCGTTCCCAACTGAATTATTTGATGAAGTGGGAGATCGCATCCGTGAAGTA
GGTCATGAATATGGTACAACAACTGGTCGTCCACGTCGTGTGGGTTGGTTTGACTCAGTTGTGATGCGTCACAGC
CGCCGTGTATCTGGGATTACCAATCTTTCATTGAACTCTATAGATGTTTTGAGTGGTTTGGATACTGTGAAAATC
TGTGTCGCCTATGATCTTGATGGTCAACGTATTGATTACTATCCTGCTAGTCTTGAGCAGTTGAAACGTTGTAAG
CCAATCTACGAGGAATTGCCAGGTTGGTCAGAAGACATCACTGGAGTCCGTAATTTGGAAGACCTTCCTGAGAAT
GCACGCAACTATGTTCGTCGTGTAAGCGAGTTGGTTGGTGTTCGTATCTCAACTTTCTCAGTTGGGCCAGATC

336 ***Staphylococcus hominis*** **(SEQ ID NO. 336)**

CTCTTTGAAGGAGCGCAAGGAGTTATGTTAGATATCGACCATGGTACATATCCTTTTGTAACGTCAAGTAATCCT
GTGGCAGGTAATGTGACAGTAGGAACTGGCGTGGGTCCAACCTTCGTATCTAAAGTGATTGGGGTATGTAAATCC
TATACATCTCGTGTAGGTGACGGCCCATTCCCTACTGAATTATTCGACGAAGATGGTCATCATATTAGAGAAGTA
GGTCGTGAATATGGAACGACAACAGGACGTCCTCGTCGTGTAGGTTGGTTCGACTCAGTTGTATTACGTCACTCT
CGTCGTGTAAGTGGTATTACAGACTTATCTATTAACTCAATTGACGTTTTAACAGGTTTAGATACGGTTAAAATT
TGTACAGCTTATGAGTTAGATGGTGAAACAATCACAGAATATCCAGCAAACTTAGACCAATTACGTCGTTGTAAA
CCAATTTTCGAAGAGTTACCTGGTTGGACGGAAGACATTACAGGTTGTCGTACATTAGAAGAATTACCTGAAAAC
GCACGTAAATACTTAGAACGTATTTCTGAATTATGTGGCGTTCATATTTCAATCTTCTCAGTAGGTCCAGGCC

337 ***Bacillus anthracis*** **(SEQ ID NO. 337)**

CTATTTGAAGGTGCTCAAGGTGTTATGCTTGATATCGACCACGGTACGTACCCGTTCGTTACATCTTCTAACCCA
ATTGCTGGTGGTGTAACAGTTGGAACTGGAGTTGGTCCTGCGAAAGTTACTCGCGTTGTAGGTGTATGTAAAGCA
TATACAAGCCGCGTTGGTGATGGTCCATTCCCTACTGAGCTTCATGACGAAATTGGTCATCAAATTCGTGAAGTT
GGTCGTGAGTATGGAACGACAACTGGTCGTCCACGCCGCGTAGGTTGGTTCGATAGCGTTGTTGTAAGACATGCA
CGTCGTGTTAGTGGTTTAACAGATTTATCATTAAACTCTATCGACGTTCTAACTGGTATTCCAACACTTAAAATT
TGTGTTGCTTACAAATGCGATGGGAAAGTTATCGATGAAGTTCCAGCAAACTTAAACATTTTAGCGAAATGTGAG

CCTGTATACGAAGAGCTTCCAGGTTGGACAGAAGATATTACTGGTGTAAGATCATTAGATGAGCTTCCTGAAAAT
GCTCGAAAATACGTAGAACGTGTTTCTGAGTTAACAGGAGTTCAATTATCTATGTTCTCAGTAGGGCCAGACC

338 ***Bacillus cereus*** **(SEQ ID NO. 338)**

GACNCGGTACGTACCCGTTCGTTACATCTTCTAACCCAATTGCTGGTGGTGTAACAGTTGGAACTGGAGTTGGTC
CTGCGAAAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGCGTTGGTGATGGTCCATTCCCTACTG
AGCTTCATGATGAAATTGGTCATCAAATTCGTGAAGTTGGTCGCGAGTATGGAACGACAACTGGTCGTCCACGCC
GCGTAGGTTGGTTCGATAGCGTTGTTGTAAGACATGCACGTCGTGTTAGTGGTTTAACGGATCTATCATTAAATT
CTATCGACGTTTTAACAGGTATTCCAACTCTTAAAATTTGTGTAGCTTACAAATACAATGGCGAAGTTATTGATG
AAGTTCCAGCTAACTTAAACATTTTAGCGAAATGTGAGCCTGTATATGAAGAGCTTCCAGGTTGGGAAGAAGATA
TTACTGGTGTAAAATCATTAGATGAACTTCCTGAAAATGCACGAAAATACGTAGAACGTGTTTCTGAGTTAACAG
GAATTCAAATATCTATGTTCTCAGTAGGTCCCCACCA

339 ***Bacillus megatherium*** **(SEQ ID NO. 339)**

CTATTCGAAGGGGCACAAGGTGTTATGTTAGATATCGATCAAGGAACATATCCATTTGTTACATCTTCAAACCCA
GTAGCGGGTGGAGTAACAATTGGTTCTGGGGTAGGTCCATCTAAAATCAAACACGTTGTAGGTGTATCAAAAGCG
TATACAACTCGTGTTGGTGACGGCCCTTTCCCAACTGAATTAACAAACGAAATCGGTGATCAAATCCGTGAAGTA
GGACGTGAATATGGTACAACAACTGGTCGTCCTCGCCGTGTAGGTTGGTTCGACAGTGTAGTTGTACGTCATGCT
CGTCGCGTTAGTGGAATCACAGATCTATCTTTAAACTCAATTGATGTATTAACGGGAATTGAGACATTAAAGATT
TGCGTAGCTTATCGTTATAAAGGGGAAGTTATGGAAGAATTCCCTGCTAGCTTAAAAACACTTGCAGAGTGCGAA
CCTGTATATGAAGAGCTTCCAGGTTGGACAGAAGATATTACGGGTGTGAAAACATTAGATGAGTTACCTGATAAC
GCTCGCCACTACTTAGAGCGCGTGTCTCAATTAACAGGTATTCCTTTATCTATTTTCTCAGTAGGTCCAGGCC

340 ***Enterococcus casseliflavus*** **(SEQ ID NO. 340)**

TATTCGAAGGNAGCTCAAGGCGTGATGCTGGATATCGACCAAGGAACCTATCCTTTCGTGACATCATCCAACCCC
GTTGCTGGAGGTGTCACCATCGGTAGTGGTGTGGGTCCTTCAAAAATCAACAAAGTCGTTGGTGTCTGCAAAGCT
TACACCTCTCGGGTAGGAGATGGTCCTTTCCCAACGGAACTGTTTGATGAAACAGGTGAACAAATTCGTAAGATC
GGTCGTGAATACGGAACAACGACAGGACGTCCTCGCCGTGTGGGCTGGTTTGATACCGTCGTGATGCGCCATTCA
AAACGGGTCTCAGGGATCACGAATCTATCCCTTAACTCGATCGATGTCTTGAGCGGCTTAGAAACCGTGAAGATC
TGTACGGCTTATGAACTAGACGGCGAATTGATCTATCATTACCCAGCAAGCTTGAAAGAGTTGAACCGCTGCAAA
CCAGTCTACGAAGAACTTCCTGGCTGGTCTGAAGACATTACTGGCTGCAAAACATTAGCAGATCTGCCAGAAAAT
GCACGCAATTACGTTCACCGCATCTCTGAATTAGTCGGTGTCCGCATTTCGACCTTCTCAGTAGGTCCAGACC

341 ***Enterococcus raffinosus*** **(SEQ ID NO. 341)**

CTATTTGAAGGTGCTCAAGGCGTTATGCTGGATATTGATCAAGGAACCTATCCATTTGTTACTTCTTCGAACCCA
GTTGCCGGTGGGGTAACTATCGGTAGTGGTGTAGGACCTGCTAAAATCGACAAAGTTGTCGGTGTTTGTAAAGCC
TATACTTCACGCGTAGGTGATGGACCTTTCCCAACTGAATTGTTTGATGAAGTTGGAGATCAGATTCGTGAAGTC
GGTCGTGAATATGGAACGACTACTGGTCGTCCACGTCGTGTGGGCTGGTTTGACTCGGTTGTGATGCGTCATTCA
AAACGTGTTTCTGGGATTACGAATCTTTCTTTAAACTCGATTGATGTCTTGAGCGGTCTGGATACAGTGAAAATT
TGTACAGCGTATGAGCTGGACGGAGAACTAATTTACCATTATCCAGCAAGCCTAAAAGAATTAAATCGTTGTAAG

CCCGTTTATGAAGAACTACCTGGTTGGAGCGAAGATATTACAGGCTGCCGTGATTTAGCTGATCTACCGGAAAAT
GCGCGTAATTATGTACGTCGCGTTTCTGAACTTGTGGGTGTGCGTATCTCGACCTTCTCAGTTGGTCCTGGTC

342 Staphylococcus aureus (SEQ ID NO. 342)

CTATTTGAAGGGGCACAAGGTGTAATGTTAGATATCGACCATGGTACATATCCATTCGTTACATCAAGTAATCCA
ATTGCAGGTAACGTTACTGTTGGTACAGGTGTAGGTCCTACATTCGTTTCAAAGGTAATTGGTGTATGTAAAGCT
TATACATCACGTGTTGGTGATGGTCCATTCCCTACTGAATTATTCGATGAAGATGGACATCATATTAGAGAAGTT
GGTCGTGAATATGGTACAACAACAGGACGTCCACGTCGTGTAGGTTGGTTTGATTCAGTTGTATTACGTCACTCT
CGTCGTGTAAGTGGTATTACAGATTTATCTATTAACTCAATCGATGTTTTAACAGGCCTAGACACAGTGAAAATC
TGTACAGCTTATGAATTAGACGGTAAAGAAATTACTGAGTACCCAGCAAACTTAGATCAATTAAAACGTTGTAAA
CCAATCTTTGAAGAGTTACCAGGTTGGACAGAAGACGTAACAAGTGTGCGTACTTTAGAAGAATTACCTGAAAAT
GCACGTAAATATTTAGAGCGTATTTCAGAATTATGTAATGTACAAATTTCTATCTTCTCAGTAGGTCCAGGCC

343 Staphylococcus epidermidis (SEQ ID NO. 343)

CTCTTCGAAGGTGCTCAAGGTGTCATGTTAGATATCGACCATGGTACATATCCATTCGTTACATCTAGTAATCCA
GTTGCAGGTAACGTTACAGTAGGTACAGGTGTTGGCCCTACATCAGTGTCTAAAGTGATTGGTGTATGTAAATCA
TATACATCTCGTGTAGGTGACGGTCCATTCCCAACTGAACTTTTTGATGAAGATGGCCACCATATTAGAGAAGTG
GGTCGTGAATATGGTACAACTACTGGACGTCCACGTCGTGTAGGTTGGTTCGACTCAGTTGTATTACGTCATTCA
CGTCGTGTAAGTGGTATCACAGATCTTTCAATTAACTCAATCGACGTTTTAACAGGATTAGACACAGTTAAAATT
TGTACTGCTTACGAATTAGATGGTGAAAAAATTACTGAATACCCAGCAAACTTAGATCAATTAAGACGTTGTAAA
CCTATCTTCGAAGAGCTTCCAGGTTGGACTGAAGACATTACAGGTTGTCGTAGTTTAGATGAACTTCCTGAGAAT
GCACGTAATTACTTAGAGCGTATTTCAGAATTATGCGGTGTCCATATTTCAATCTTCTCAGTAGGTCCTGGTC

344 Stretpococcus mitis (SEQ ID NO. 344)

TATGGCTAGCNATAGACCAAGGTACGTATCCATTTGTTACGTCATCAAACCCTGTGGCTGGTGGTGTTACGATTG
GTTCTGGTGTTGGTCCAAGTAAGATTGACAAGGTTGTAGGTTTATGTAAAGCCTATACGAGTCGAGTAGGAGACG
GTCCTTTCCCAACTGAATTGTTTGATGAAGTGGGAGAACGTATCCGTGAAGTTGGTCATGAATATGGTACAACAA
CTGGTCGTCCACGTCGTGTGGGTTGGTTTGACTCAGTTGTGATGCGTCATAGTCGTCGTGTTTCTGGTATTACTA
ATCTTTCATTGAACTCTATCGATGTTTTGAGTGGTTTAGATACAGTGAAAATCTGTGTGGCCTATGATCTTGATG
GTCAACGTATTGACTACTATCCAGCTAGTCTTGAGCAATTGAAACGTTGCAAGCCTATCTATGAAGAGTTGCCAG
GTTGGTCAGAAGATATTACTGGAGTTCGTAATTTGGAAGATCTTCCTGAGAATGCGCGTAACTATGTTCGTCGTG
TGAGTGAATTGGTTGGCGTTCGTATTTCTACTTTCTCAGTAG

345 Streptococcus species (SEQ ID NO. 345)

ATGGCTTGCTATTGACCAAGGGTACATACCCATTTGTAACATCATCTAACCCAGTCGCTGGTGGTGTAACAATCG
GTTCTGGTGTTGGTCCAAGTAAAATCAACAAAGTTGTCGGTGTATGTAAAGCCTACACAAGCCGTGTTGGTGACG
GACCATTCCCAACTGAACTTTTAGACGAAGTTGGTGACCGCATCCGTGAAGTGGGTCACGAATATGGGACAACAA
CTGGACGTCCACGTCGTGTTGGTTGGTTTGACTCAGTTGTTATGCGTCACAGCCGCCGCGTATCAGGTATCACAA
ACTTGTCACTTAACTCAATTGACGTTCTTTCAGGTCTTGATACGGTCAAAATCTGTGTGGCATACGACCTTGACG
GTCAACGTATCGACCACTACCCAGCAAGCCTTGAACAATTGAAACGTTGTAAACCAATCTACGAAGAATTGCCAG

GTTGGTCAGAAGACATCACAGGTTGCCGTAGCCTAGATGAACTTCCCGAAAATGCTCGTGACTACGTTCGCCGTG
TTGGTGAACTCGTTGGTGTTCGCATTTCAACATTCTCAGTTGGCCCC

346 Streptococcus canis (SEQ ID NO. 346)

TGGCTTGCNATCGACCAAGGTAACTTACCCATTTGTTACTTCTTCAAACCCAGTTGCTGGTGGGGTAACAATCGG
TTCAGGTGTTGGTCCAAGCAAGATCAATAAAGTTGTCGGTGTATGTAAAGCTTACACAAGCCGTGTTGGTGACGG
TCCGTTCCCAACAGAACTTCTAGATGAAGTTGGAGATCGTATCCGTGAAATTGGTCACGAATATGGTACAACAAC
TGGACGTCCACGTCGTGTTGGTTGGTTTGACTCAGTTGTTATGCGTCACAGCCGCCGCGTATCAGGTATCACAAA
CTTGTCACTTAACTCAATCGATGTTCTTTCAGGACTTGATACTGTTAAAATCTGTGTGGCATACGACCTTGACGG
TCAACGTATCGACCACTACCCAGCAAGTCTTGAACAATTGAAACGTTGTAAACCAATCTACGAAGAATTGCCAGG
TTGGTCAGAAGACATCACAGGTTGCCGTAGCCTAGATGAACTTCCCGAAAATGCTCGTGACTACGTTCGCCGTGT
TGGTGAACTCGTTGGTGTTCGCATTTCAACATTCTCAGTTGGCCCC

347 Streptococcus mutans (SEQ ID NO. 347)

TATGGCTTGCNATTGACCAAGGTAACCTATCCATTTGTAACTTCATCAAATCCAGTTGCAGGTGGCGTTACCATC
GGATCTGGTGTTGGACCAAGTAAAATCAATAAGGTTGTTGGTGTCTGCAAAGCCTATACCAGCCGTGTAGGTGAT
GGTCCTTTCCCCACAGAACTTTTTGACCAAACGGGAGAGCGCATTCGTGAAGTTGGGCATGAATACGGGACAACA
ACAGGGCGTCCGCGTCGAGTTGGTTGGTTTGACTCAGTTGTTATGCGTCACAGCCGCCGTGTATCAGGCATTACC
AATTTATCTCTTAACTGTATTGATGTACTTTCAGGTCTTGATATCGTAAAAATCTGTGTAGCCTATGATTTGGAT
GGAAAACGGATTGATCACTACCCTGCCAGTCTCGAACAACTCAAACGCTGTAAACCTATTTATGAAGAATTGCCG
GGCTGGTCTGAAGATATTACAGGGGTTCGCAGTTTAGAAGATCTTCCTGAAAATGCTCGTAATTATGTCCGCCGT
GTAAGTGAATTAGTTGGTGTTCGTATTTCTACTTTCTCAGTNGTCCCC

348 Streptococcus gordonii (SEQ ID NO. 348)

TAATGCTAGCAATTGACCAAGGTACCTATCCATTTGTAACCTCATCTAATCCAGTTGCTGGTGGTGTAACGATCG
GTTCTGGTGTGGGTCCTAGCAAGATTGACAAAGTAGTGGGTGTTTGTAAAGCCTATACAAGTCGTGTTGGTGATG
GTCCTTTCCCAACAGAGCTTTTCGATGAAGTAGGTGACCGCATTCGTGAGGTTGGTCATGAGTATGGTACAACAA
CAGGACGTCCGCGTCGAGTTGGTTGGTTTGACTCTGTTGTTATGCGCCATAGCCGCCGTGTATCTGGGATTACCA
ATCTTTCGCTTAACTCTATCGATGTTTTGAGCGGTCTGGATACAGTCAAGATCTGTGTAGCCTATGATTTGGATG
GCCAAAGAATCGACCACTATCCAGCTAGTTTGGAACAGCTTAAACGTTGTAAGCCGATTTACGAAGAGCTTCCTG
GATGGTCTGAAGATATTACTGGCGTTCGTAAGTTAGAAGATCTTCCAGAAAATGCTCGCAACTATGTTCGGCGAG
TAAGCGAGTTGGTTGGTGTACGTATTTCCACCTTCTCAGTTGGCCCC

349 Bacillus species (SEQ ID NO. 349)

TATGGCTTGCAATTGACNCGGTACGTACCCATTCGTTACATCTTCTAACCCGATTGCGGGTGGTGTAACAGTTGG
AACTGGAGTTGGTCCTGCGAAAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGTGTTGGTGACGG
TCCATTCCCTACTGAACTTAATGATGAAATTGGTCATCAAATTCGTGAAGTTGGTCGTGAGTACGGAACAACAAC
TGGTCGTCCGCGCCGCGTAGGTTGGTTCGATAGCGTTGTTGTAAGACATGCGCGTCGTGTTAGTGGTTTAACGGA
TCTATCATTAAATTCTATCGACGTTTTAACAGATATTCCGACTCTTAAAATTTGTGTTGCTTACAAATACAATGG
CGAAGTTATCGATGAAGTTCCAGCAAACTTAAACATTTTAGCAAAATGTGAGCCTGTATATGAAGAGCTTCCAGG

TTGGACAGAAGATATTACTGGTGTAAAATCATTAGACGAGCTTCCTGAAAATGCACGAAAATACGTAGAACGTGT
TTCTGAGTTAACAGGAATTCAATTATCTATGTTCTCAGTNGTCCCC

350 ***Bacillus pumilus*** **(SEQ ID NO. 350)**

GTTATGGCTTGCTATTGATCAAGGGACATATCCATTTGTCACGTCATCTAACCCAGTAGCTGGAGGAGTGACGAT
TGGTTCTGGCGTAGGACCAACAAAAATTCAACATGTGGTCGGCGTGTCAAAAGCGTACACAACACGTGTTGGAGA
TGGCCCATTCCCGACAGAACTCCATGATGAAATTGGCGATCAAATCCGTGAGGTTGGCCGTGAATACGGTACAAC
AACTGGACGTCCGCGCCGTGTTGGCTGGTTTGACAGTGTCGTTGTCCGTCATGCTCGACGTGTGAGCGGGATTAC
AGATCTATCTCTTAACTCAATTGATGTACTGACAGGGATTGAAACATTGAAAATCTGTGTCGCTTATAAATTGAA
CGGAGAAATCACAGAGGAATTCCCAGCAAGTCTAAATGAACTAGCGAAATGTGAGCCTGTCTACGAAGAAATGCC
AGGATGGACAGAGGATATTACAGGCGTGAAGAATTTAAGCGAACTGCCTGAAAATGCCCGTCATTATTTAGAGCG
CATTTCACAATTAACAGGTATTCCACTTTCCATTTTCTCAGTTGNCCCC

351 ***Enterococcus villorum*** **(SEQ ID NO. 351)**

TATCGACCAGGGACATATCCATTTGTTACTTCTTCCATCCAGTAGCAGGTGGTGTAACAATTGGTAGTGGCGTTG
GTCCATCTAAAATTAATAAAGTCGTCGGAGTATGTAAAGCTTATACTTCTCGTGTTGGAGATGGCCCGTTCCCTA
CAGAATTATTTGATGAAACAGGGCAACAAATACGTGAAGTAGGTCGTGAATATGGCACAACAACAGGTCGTCCAC
GACGAGTTGGATGGTTTGATACGGTTGTTATGCGCCATTCAAAACGTGTATCAGGTATTACAAATTTATCTCTTA
ATTCGATTGATGTATTAAGCGGATTAGAAACAGTAAAAATTTGTACGGCCTATGAACTAGATGGTGAGCTGATTT
ATCATTACCCAGCAAGTTTGAAAGAATTGAAACGTTGTAAACCAGTATATGAAGAACTACCTGGATGGTCTGAAG
ATATTACGAAATGCAAGACACTTTCTGAATTGCCAGAAAATGCACGTAACTATGTAAGACGTATTTCTGAGCTTG
TAGGTGTACGCATCTCCACATTTCTCAGTGGNCCC

352 ***Bacillus thuringensis*** **(SEQ ID NO. 352)**

CNCGGTACGTACCCGTTCGTTACATCTTCTAACCCGATTGCGGGTGGTGTAACAGTTGGAACTGGAGTTGGCCCT
GCGAAAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGTGTTGGTGACGGTCCATTCCCTACTGAA
CTTAATGATGAAATTGGTCATCAAATTCGTGAAGTTGGTCGTGAGTACGGAACAACAACTGGTCGTCCGCGCCGC
GTAGGTTGGTTCGATAGCGTTGTTGTAAGACATGCGCGTCGTGTTAGTGGTTTAACGGATCTATCATTAAATTCT
ATCGACGTTCTAACAGATATTCCAACTCTTAAAATTTGTGTTGCTTACAAATACAATGGCGAAGTTATCGATGAA
GTTCCAGCAAACTTAAACATTTTAGCGAAATGTGAGCCTGTATATGAAGAGCTTCCAGGTTGGACAGAAGATATT
ACTGGTGTAAAATCATTAGACGAGCTTCCTGAAAATGCAAGAAAATACGTAGAACGTGTTTCTGAGTTAACAGGA
ATTCAATTATCTATGTTCTCAGTGGCCCCNGGGCCCCA

353 ***Bacillus mycoides*** **(SEQ ID NO. 353)**

GGTNCGTACCCATTCGTTACATCTTCTAACCCGATTGCTGGTGGTGTAACAGTTGGAACTGGAGTTGGTCCTGCG
AAAGTTACTCGCGTTGTAGGTGTATGTAAAGCATATACAAGCCGTGTAGGTGATGGTCCGTTCCCTACTGAGCTT
CATGATGAAATTGGTCATCAAATTCGTGAAGTTGGTCGTGAATACGGAACAACAACTGGTCGTCCACGCCGCGTA
GGTTGGTTCGATAGCGTTGTTGTAAGACATGCACGTCGTGTTAGTGGTTTAACAGATCTATCATTAAATTCTATC
GACGTTCTAACAGGTATTCCAACTCTTAAAATTTGTGTTGCTTACAAATACAATGGCGAAGTTATCGATGAAGTT
CCAGCAAACTTAAACATTTTAGCGAAATGTGAGCCTGTATATGAAGAGCTTCCAGGTTGGACAGAAGATATTACT

GGTGTAAGAGCATTAGACGAGCTTCCTGAAAATGCACGAAAATACGTAGAACGTGTTTCTGAGTTAACAGGAATT
CAATTATCTATGTTCTCAGTGGNCCCCCGG

354 ***Bacillus weihennstephanensis*** **(SEQ ID NO. 354)**

TTTTTTTNGGAAGNGCGCAAGGTGTTATGCTTGATATCGACCACGGTACGTACCCGTTCGTTACATCTTCTAACC
CAATTGCTGGTGGTGTAACAGTTGGAACTGGAGTTGGTCCTGCGAAAGTTACTCGCGTTGTAGGTGTATGTAAAG
CATATACAAGCCGTGTTGGTGATGGTCCATTCCCTACTGAACTTAATGATGAAATCGGTCACCAAATTCGTGAAG
TTGGTCGTGAATACGGAACAACAACGGGTCGTCCACGCCGTGTAGGTTGGTTCGATAGCGTTGTTGTAAGACATG
CACGTCGTGTTAGTGGTTTAACAGATTTATCATTAAACTCTATCGATGTATTAACAGGTATTCCAACTGTTAAAA
TTTGTGTTGCTTACAAATGCAATGGCGAAGTTATCGATGAAGTTCCAGCTAACTTAAACATTTTAGCGAAATGTG
AGCCTGTATATGAAGAGCTTCCNGGTTGGACAGAAGATGTTACTGCTGTGAAATCATTGGATGAGCTTCCTGAAA
ATGCAAGAAAATACGTAGAGCGTGTTTTCTGAATTAACNGGAAGCCAATTNNCAAG

355 ***Staphylococcus haemolyticus*** **(SEQ ID NO. 355)**

CAAGGTGTCATGTTAGATATCGACCATGGTACATATCCTTTCGTAACTTCAAGTAACCCTGTTGCAGGTAATGTA
ACAGTTGGTACAGGTGTAGGCCCAACTTTCGTATCTAAAGTGATTGGTGTATGTAAAGCATATACATCTCGTGTA
GGCGATGGTCCATTCCCTACAGAATTATTTGATGAAAATGGACATCATATTAGAGAAGTTGGTCGTGAATACGGT
ACAACAACAGGACGTCCACGTCGTGTAGGTTGGTTTGACTCAGTTGTATTACGTCACTCTCGTCGTGTTAGTGGT
ATTACAGACTTATCTATTAACTCTATCGACGTACTTACAGGTCTTGATACAGTGAAGATTTGTACTGCTTACGAA
TTAGATGGAGAAGAAATTACAGAATATCCTGCTAACTTAGATCAATTACGTCGTTGTAAACCAATCTTTGAAGAG
TTACCAGGATGGGAAGAAGATATCACTGGTTGCCGTACATTAGAAGAATTACCAGATAACGCACGTAAATACTTA
GAACGCATTTCTGAATTATGTAATGTACGTATTTCAATCTTCTCAGT

356 ***Staphylococcus saprophyticus*** **(SEQ ID NO. 356)**

GCAAGGTGTGATGTTAGATATCGACCATGGTACATATCCATTCGTTCATCAAGTAACCCAGTTGCAGGTAATGTG
ACTGTCGGTGGCGGTGTAGGTCCAACATTCGTCTCTAAAGTTATCGGTGTGTGTAAAGCCTATACATCACGTGTC
GGCGATGGTCCATTCCCAACAGAACTATTTGACGAAGATGGGCACCACATCCGTGAAGTAGGTCGTGAATACGGT
ACAACAACAGGACGTCCACGTCGTGTAGGTTGGTTCGACTCAGTTGTATTACGTCATTCTCGTCGTGCAAGTGGT
ATTACAGATTTATCTATTAACTCAATTGATGTATTAACAGGCCTTAAAGAAGTTAAAATCTGTACTGCTTATGAG
TTAGACGGTAAAGAAATTACGGAATACCCAGCTAACTTGAAAGACTTACAACGTTGTAAGCCAATTTTTGAAACA
TTACCAGGTTGGACAGAAGATGTGACAGGTTGTCGTTCATTAGAAGAATTACCTAATAATGCGCGTAGATACTTA
GAACGTATTTCTGAATTATGTGACGTGAAGATTTCAATCTTCTCAGTTGGCCC

357 ***Bacillus subtilis*** **(SEQ ID NO. 357)**

CTCAAGGGGTTATGCTTGATATTGACCAAGGGACATACCCGTTTGTCACTTCATCCAACCCGGTCGCCGGAGGGG
TGACGATCGGTTCAGGCGTAGGCCCGACAAAAATCCAGCACGTCGTCGGTGTATCTAAAGCGTACACAACCCGTG
TCGGTGACGGTCCTTTCCCGACTGAGCTGAAAGATGAAACCGGGGATCAAATCCGTGAAGTCGGACGCGAATACG
GCACAACGACAGGCCGTCCGCGCCGTGTCGGCTGGTTTGACAGCGTTGTTGTCCGCCATGCCCGCCGCGTCAGCG
GAATCACAGATCTTTCTCTGAACTCAATCGATGTGCTGACTGGCATTGAAACATTGAAAATCTGTGTCGCTTACC
GCTACAAAGGTGAAGTGATTGAAGAATTCCCGGCAAGTCTGAAAGCTCTCGCAGAGTGTGAACCGGTATATGAAG

AAATGCCTGGCTGGACGGAAGATATCACAGGCGCAAAAACATTAAGCGATCTTCCTGAAAATGCGCGCCATTATC
TGGAACGCGTGTCTCANCTGACAGGTATTCCGCTTTCTATTTTCTCAGTAGGTCCAGA

358 ***Listeria monocytogenes*** **(SEQ ID NO. 358)**

TTTGGAAGGGGCGCAAGGGGTTATGCTTGATATTGATCAAGGAACATATCCATTTGTAACTTCAAGTAACCCGAT
TGCTGGTGGCGTAACTATCGGTAGTGGTGTTGGTCCTTCAAAAATCAATCATGTTGTTGGTGTGGCGAAAGCTTA
TACAACACGTGTTGGTGATGGTCCTTTCCCAACAGAATTATTTGATTCTATTGGTGACACTATTCGTGAAGTCGG
TCATGAATATGGTACAACGACTGGTCGTCCGCGTCGTGTAGGTTGGTTTGATAGCGTAGTGGTTCGTCATGCGCG
TCGTGTTAGTGGATTAACAGATTTATCGTTAACACTACTTGATGTTTTGACAGGAATTGAGACACTTAAAATCTG
TGTAGCTTACAAATTAGACGGAAAAACAATTACAGAGTTCCCAGCAAGTTTGAAAGATTTAGCTCGTTGCGAACC
TGTTTATGAAGAACTTCCAGGCTGGACGGAAGATATTACTGGAGTTACATCACTAGATGATCTTCCAGTGAACTG
CCGCCATTACATGGAGCGTATCGCCCAACTTACGGGAGTGCAAGTTTCTATGTTCTCAGTAGGTCCCAGACCA

359 ***Lactococcus lactis*** **(SEQ ID NO. 359)**

TNATGCTTGATATTGACNAGGAACATACCCATTTGTAACTTCTCAAACCCAGTAGCTGGTGGGGTAACGATTGGC
TCTGGTGTGGGTCCATCAAAAATTTCAAAAGTTGTTGGTGTTTGTAAAGCCTATACTTCACGTGTGGGTGATGGT
CCATTCCCAACAGAACTTTTTGATGAAGTTGGACATCAAATTCGTGAAGTAGGACATGAATATGGAACAACAACA
GGACGTCCACGTCGTGTTGGTTGGTTTGACTCAGTCGTAATGCGTCATGCAAAACGTGTTTCTGGCTTGACAAAT
CTTAGCTTGAATTCAATTGACGTTCTCTCAGGACTTGAAACAGTAAAAATTTGTGTTGCTTACGAACGTAGTAAT
GGTGAACAAATTACTCATTATCCAGCATCACTTAAGGAATTAGCAGATTGCAAACCAATCTATGAAGAATTGCCA
GGATGGTCTGAAGATATTACTTCATGCCGAACTTTAGAAGAGTTACCAGAAGCTGCTCGTAACTATGTTCGTCGG
GTTGGTGAACTAGTTGGCGTACGTATCTCGACTTTCTCAGTNGTCCCC

Figure 15 represents marker II (pstI) sequences amplified from Gram-positive bacteria (SEQ ID NOs: 360-395; SEQ ID NOs: 397-399), and some Gram-negative bacteria (SEQ ID NOs 396, 400-403).

SEQ ID NO. 360 Bacillus anthracis

ACCNNTTTTACAGACGTAAAATAGATAGGTTATATGGTTGGTATAAGTAAGATACTTGTTCGTTCATACGGTCTG
CAGCCATTGTGTATTGAATTAAGTCATTTGTTCCGATAGAGAAGAAATCAACTTCTTTTGCGAATTGATCTGCTA
ATACTGCTGAAGCTGGGATTTCAACCATCATACCAACTTCAATAGAATCAGAAACAGTTGTACCCACTTCTACAA
GTTTCGCTTTTTCTTCTAATAAGATCGCTTTTGCTTGACGGAACTCATCAAGAGTTGCAATCATTGGGAACATAA
TTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCACGAAGTTGTGTACGGAACACATCTTGCTCATCAAGAC
ATAAGCGAATTGCACGGTAGCCCAAGAACGGNTTCATTCTCTTA

SEQ ID NO. 361 Bacillus cereus

GCCTTCTTTATGAGCAGCATCGATAACCATTTTTACAAGACGTAAAATAGATGGGTTATATGGTTGGTATAAGTA
TGATACTTGTTCGTTCATACGGTCTGCAGCCATTGTGTATTGGATTAAATCATTTGTTCCGATAGAGAAGAAGTC
AACTTCTTTCGCGAATTGATCTGCTAATACTGCTGAAGCTGGGATTTCAACCATCATACCAACTTCAATAGAATC
AGAAACAGTTGTACCCGCTTCTACAAGTTTCGCTTTCTCTTCTAATAAAATCGCTTTCGCTTGACGGAACTCATC
AAGAGTTGCAATCATTGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCACGAAGTTGTGT
ACGGAACACATCTTGCTCATCAAGACATAAGCGAATTGCACGGTATCCCAAGAACGGATCATTCTCGTTA

SEQ ID NO. 362 Listeria monocytogenes

GCCCTCTTTATGAGAAGCATCAATTACCATTTTTACTAAACGTAAGATGGATGGATTGTATGGTTGGTAAAGGTA
AGAAACGCGTTCGTTCATACGGTCCGCAGCCATTGTATACTGAATTAAGTCATTTGTTCCGATAGAGAAGAAATC
AACTTCTTTTGCAAATTGATCAGCAAGAACTGCAGCGGCAGGAATTTCAATCATAATTCCAAGTTCGATGGAATC
AGATACTTCTGTTCCAGCAGCTTTTAGTTTTGCTTTCTCATCTAGTAAAATATCACGTGCTTGACGGAATTCATT
TACTGTTGCAATCATCGGGAACATAATTTTTAAGTTACCATATACACTTGCGCGAAGTAAGGCGCGAAGTTGCGT
ACGGAATAATTCTTCATTCGCAAAACAAAGACGAATTGCGCGGAATCCCAAGAACGGATCNTTCTCCTTA

SEQ ID NO. 363 Streptococcus pneumoniae

CGCGTGAGCTGCTTTGATCCATTGTTAATCAAGCGTAGGATTGATGGGTTGTATGGTTGGTAAAGGTATGAAACT
TGTTCGTTCATACGGTCTGCTGCCATTGTATATTGGATCAAGTCATTTGTACCAATTGAGAAGAAGTCAACTTCT
TTAGCAAATTGGTCTGCAAGCATAGCCGCTGCAGGAATCTCGATCATGATACCAACTTGAATGTTATCCGCAACT
GCAACACCTTCAGCAAGAAGGTTTGCTTTTTCTTCATCAAAGACTGCTTTCGCTGCACGGAATTCTTTCAAGAGC
GCAACCATTGGGAACATGATACGCAATTGACCGTGAACAGACGCACGAAGAAGAGCACGGATTTGTGTGCGGAAC
ATAGCATCTCCAGTCTCAGAGATAGAGATACGAAGAGCACGGAATCCNANGAACGGATCCTTTTTCNTA

SEQ ID NO. 364 Streptococcus pyogenes

TGCGCTGCTTTGATACATTGTTGATCAAACGTAATATTGATGGGTTGTATGGTTGGTAAAGGTATGATACTTGTT
CGTTCATACGGTCTGCTGCCATAGTGTATTGGATAAGGTCGTTTGTTCCAATTGAGAAGAAATCAACTTCCTTAG

CAAATTGGTCTGCAAGCATAGCAGCTGCAGGAATCTCAATCATGATACCAACTTGGATGTCATCAGCAACCGCAA
CGCCTTCTGCAAGCAAGTTTGCTTTTTCTTCGTCAAAGACTGCTTTTGCAGCACGGAATTCTTTAAGAAGCGCAA
CCATTGGGAACATAATACGAAGTTGTCCGTGAACAGAGGCACGAAGAAGCGCACGCATTTGTGTGCGGAACATGG
CATCCCCAGTTTCAGAGATGGAAATACGAAGAGCACGGAAACCNAAGAACGGATCNTTTTNCCNTA

SEQ ID NO. 365 Streptococcus agalactiae

GAGCAGCTTTGATAACGTTGTTAATCAAACGAAGGATTGATGGATTGTATGGTTGATAGAGGTATGAAACTTGCT
CATTCATACGGTCCGCAGCCATTGTGTATTGGATAAGATCATTAGTACCAATTGAGAAGAAATCAACTTCTTTTG
CAAATTGGTCTGCAAGCATAGCTGCCGCTGGGATTTCAATCATAATACCAACTTCAATGCCTTCAGCTACTGCTA
CACCGTCAGCTAACAAGTTCGCTTTCTCTTCTTCAAATATAGCTTTAGCAGCACGGAATTCTTTAAGCAAAGCAA
CCATTGGGAACATGATGCGTAGCTGTCCATGAACTGAAGCACGAAGAAGTGCTCGGATTTGTGTGCGGAACATTG
CATCACCAGTTTCAGAAATTGAAATACGCAATGCACGGAATCCCAAGAACGGATCNTTTTTCNTA

SEQ ID NO. 366 Streptococcus mutans

TGAGCAGCCTTAACCCATGATCAACCAAGCGAAGAATGGATGGATTATAAGGTTGGTAGAGGTATGATACTTGTT
CATTCATACGGTCAGCAGCCATGGTGTATTGAATAAGGTCATTTGTACCGATTGAGAAGAAATCAACTTCCTTAG
CAAATTGGTCAGCCAACATTGCAGCTGCAGGAATTTCAATCATGATACCAACTTGGATATCATCTGAAACAGCAA
CGCCTTCAGCTTTAAGATTAGCCTTTTCTTCTTCCAGAATACCTTTAGCTTTACGGAACTCATTGAGCAAAGCTA
CCATTGGGAACATGATACGCAACTGACCATGAACAGAAGCACGCAAAAGGGCACGCAACTGTGTGCGGAACATCT
GATTGCCTGTTTCTGAGATTGAAATACGAAGTGCACGAAAACCAAAGAACGGATCATTCTCTTA

SEQ ID NO. 367 Enterococcus flavescens

CGTCGTGTGCTGCATCAATTACATTTTTAATTAAACGTAAGATTGATGGGTTGTATGGTTGGTATAAGTAAGAAA
CGCGTTCGTTCATACGGTCTGCCGCCATTGTGTATTGGATTAAGTCGTTGGTTCCAACACTAAAGAAGTCTACTT
CTTTGGCAAATTTATCAGCTAATACGGCAGCTGCTGGAATTTCAATCATAATACCTACTTGGATATCGTTTGAAA
CTTCAACACCTTCGTTGACTAATTTTTGTTTTTCGTCTTCAAAGATTGCTTTCGCTGCTCTAAATTCTTTCAAAG
TAGCAACCATTGGGAACATGATACGTAAGTTACCATGAACAGACGCACGTAATAATGCACGCATTTGTGTACGGA
ACATGCCGTCACCTAGTTCTGATAAGCTAATACGTAATGCACGGTAACCCAAGAACGGATNATTCTCGTA

SEQ ID NO. 368 Staphylococcus aureus

NNCCCNTCTTATGTGACGCTTCAATAACTTGTTTAACTAAACGTAAGATTGAAGGGTTATATGGTTGGTATAGAT
ATGATACACGCTCTGACATACGGTCAGCAGCTAATGTGTATTGAATTAAATCATTTGTACCGATACTGAAGAAAT
CTACTTCTTTAGCAAAGACATCAGCTAATGCTGCTGTTGCAGGTATCTCTACCATGATTCCTAATTCTATATCAT
CCGAAATGTCATGACCTTCATTTTTAAGGTTTTCTTTTTCTTCTAATAATATAGCTTTTGCTTCTCTAAATTCGT
TAATTGTTGCAACCATTGGGAACATGATATTTAACTTACCATAAACTGATGCACGTAATAATGCACGTAGCTGTG
GTCTGAAAATATCTTGTTGCGCAAGGCATAAACGAATCGCACGGTAACCCAAGAACGGATCCNTTNTCCTTAA

SEQ ID NO. 369 Staphylococcus epidermidis

CTTCTTTATGAGAAGCTTCAATAACTTGTTTAACTAATCGTAAAATTGAAGGATTATATGGTTGATATAAGTATG
AAACTCGTTCAGACATACGGTCAGCAGCTAATGTGTATTGAATTAAGTCATTCGTTCCTATACTAAAGAAATCTA

CTTCTTTAGCAAATACATCAGCAAGTGCCGCGGTAGCTGGAATTTCAACCATAATACCTAATTCAATATCATCTG
AAACTTCGTAACCTTCGCGAAGAAGATTTTCTTTCTCTTCAAGAAGCATTGATTTAGCGTCACGGAATTCTTTAA
TTGTTGCTACCATTGGGAACATAATATTCAATTTCCCATAGACTGAAGCACGTAGTAATGCACGTAATTGTGGTC
TAAAGATTTCCGGCTGTGCTAAACATAAACGTATCGCACGATAACCCAAGAACGGATCNTTCTNCGTA

SEQ ID NO. 370 Bacillus thuringensis

CTTTATGAGCAGCATCGATAACCATTTTTACAAGACGTAAAATAGATGGGTTATATGGTTGGTATAAGTATGATA
CTTGTTCGTTCATACGGTCTGCAGCCATTGTGTATTGGATTAAATCATTCGTTCCGATAGAGAAGAAATCAACTT
CTTTCGCGAATTGATCTGCTAATACTGCTGAAGCTGGGATTTCAACCATCATACCAACTTCAATAGAATCAGAAA
CAGTTGTACCCGCTTCTACAAGTTTCGCTTTCTCTTCTAATAAAATCGCTTTCGCTTGACGGAACTCATCAAGAG
TTGCAATCATTGGGAACATAATTTTTAAGTTGCCGTATACGCTAGCACGAAGTAATGCACGAAGTTGTGTACGGA
ACACATCTTGCTCATCAAGACATAAGCGAATTGCACGGTATCCCAAGAACGGATCATTCTCNTTA

SEQ ID NO. 371 Staphylococcus hominis

CNCCNNCCTTATGAGGAAGCTTCAATAACCTGTTTAACTAAACGTAAAATTGCTGGATTATATGGTTGATATAAA
TATGAAACACGTTCAGACATACGATCAGCTGCCATAGTATATTGAATTAAGTCATTAGTTCCTATACTAAAGAAA
TCTACTTCTTTAGCAAAGATATCAGCTAACGCAGCAGTAGAAGGAATCTCTACCATGATACCTACTTCGATATCA
TCAGCAACTTCTTGTCCTTCGCTAGTTAATTTATCTTTTTCTTCTAAAAGAATAGCTTTAGCATCTCTAAACTCT
TTAATAGTAGCTACCATTGGGAACATAATATTTAATTTACCATAAGCAGATGCGCGTAATAACGCACGTAATTGT
GTTCTGAAGATGTCTTGTTGATCTAAGCACAAACGAATTGCACGATAACCCANGAACGGATTCATNTCNTA

SEQ ID NO. 372 Enterococcus faecium

CGCGTGTGCTGCATCAATTACATTTTTGATCAAACGTAAAATTGATGGGTTATATGGTTGGTACAAGTAAGAAAC
GCGTTCGTTCATACGGTCTGCTGCCATTGTGTATTGAATCAAATCGTTCGTACCTACAGAGAAGAAATCTACTTC
TTTTGCAAACTTGTCTGCTAAGACTGCTGCTGCTGGAATCTCGATCATGATGCCGACTTGGATCGTATCAGATAC
TTCCTTGCCTTCACTGATCAATTTTTGTTTTTCTTCTTCAAAGATCGCTTTTGCTGCGCGGAATTCTTTGAGTGT
AGCTACCATAGGGAACATGATACGTAAGTTACCATGAACAGATGCACGAAGCAATGCACGCATTTGTGTACGGAA
CATTTCGTCGCCTTGTTCAGATAAACTGATACGCAATGCACGATATCCCAAGAACGGATCATTCTCCTTA

SEQ ID NO. 373 Clostridium perfringens

CNTGTTTGTGAGCTCCATCTATTGTCATTTTGATTAATCTTAATACAGCTGGATGCATTGGATTGTAAAGGTATG
ATACCTTTTCACTCATTCTGTCAGCAGCTAATGTATATTGTATTAAATCGTTAGTTCCTATTGAGAAGAAATCAA
CATGCTTAGCTAATTCATCAGCATAAACTGCTGCAGCTGGGATTTCAACCATGATACCCCATTGAATTGAATCTG
AGTATGCTATACCTTCTGCTTTTAACTCAGCTTTGCATTCTTCAACAAATGCTTTAGCTTGTTGGAATTCTTCTA
ATCCTGAAATCATTGGGAACATTACTGCAAGATTTCCATAAACAGAAGCTCTTAATAAAGCTCTTATTTGAACTC
TAAAGATATCTTTTCTGTCTAAGCATAATCTTATAGCTCTGTATCCCAAGAACGGATCNNTNNTCNTTAA

SEQ ID NO. 374 Bacillus mycoides

CTTTATGAGCAGCATCGATCACCATTTTTACAAGACGTAAAATTGATGGGTTATATGGTTGGTATAAGTAAGATA
CACGTTCGTTCATACGGTCTGCAGCCATTGTGTATTGGATTAAGTCATTTGTTCCGATAGAGAAGAAATCGACTT

CTTTTGCGAATTGATCTGCTAATACTGCTGAAGCTGGAATTTCAACCATCATACCAACTTCAATAGAATCAGAAA
CAGTTGTACCCGCTTGGACAAGTCTTTCTTTCTCTTCTAATAAAATCGCTTTCGCTTGACGGAATTCATCAAGAG
TTGCAATCATCGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCACGAAGTTGTGTACGGA
ACACATCTTGTTCTTCAAGGCATAAGCGAATTGCACGGTATCCCAAGAACGGATCNTTCTCNTTA

SEQ ID NO. 375 Streptococcus oralis

CNNTTTCCCTTCGCGTGAGCTGCTTTGATAACGTTGTTGATCAGCGTAGGATTGATGGGTTGTATGGTTGGTAAA
GGTATGAAACTTGCTCGTTCATACGGTCTGCTGCCATTGTGTATTGGATCAAGTCGTTTGTACCAATTGAGAAGA
AGTCAACTTCTTTAGCAAATTGGTCTGCAAGCATTGCTGCTGCAGGAATTTCGATCATGATACCAACTTGGATAT
TATCCGCAACTGCAACACCTTCAGCAAGAAGGTTTGCTTTTTCTTCGTCAAAGACTGCTTTCGCTGCACGGAATT
CTTTCAAGAGCGCAACCATTGGGAACATGATACGTAATTGACCGTGAACAGACGCACGAAGAAGAGCACGGATTT
GTGTGCGGAACATAGCATCTCCAGTCTCAGAGATAGAGATACGAAGAGCACGGAATCCNAAGAACGGATCNTTTC
TCTTA

SEQ ID NO. 376 Enterococcus hirae

CNATTTACCTTCGCATGCGCTGCATCGATCACGTTTTTAATCAAACGTAGGATTGATGGGTTGTAAGGTTGATAC
AAGTATGAAACACGTTCGTTCATACGGTCAGCTGCCATAGTGTATTGGATCAAGTCATTCGTTCCTACTGAGAAG
AAGTCAACTTCCTTAGCAAACTTGTCAGCTAAGACAGCTGCTGCTGGAATTTCGATCATGATGCCGACTTGGATC
GTATCAGATACTTCCACGCCTTCATTCAATAATTTTTGTTTTTCGTCTTCAAAGATTGCTTTTGCAGCACGGAAT
TCTTTAAGAGTCGCTACCATTGGGAACATGATACGTAAGTTTCCATGAACAGATGCACGTAATAATGCGCGCATT
TGCGTACGGAACATTTCGTCACCTTGTTCTGACAAGCTGATTCGTAATGCACGATAGCCCAAGAACGGATCNTTN
TCCTTA

SEQ ID NO. 377 Enterococcus avium

CNATTTNCCTTCGCGTGCGCTGCATCAATCACGTTTTTGATTAAGCGTAGAATTGATGGGTTATATGGTTGGTAA
AGGTAAGAAACGCGTTCGTTCATACGGTCAGCTGCCATCGTGTATTGAATTAAGTCATTTGTTCCGATACTGAAG
AAATCAACTTCTTTGGCAAACTTGTCAGCTAGTACAGCTGCAGCTGGAATTTCGATCATGATTCCGACTTGGATC
GTATCAGAAACTTCCACGCCTTCTTTAACCAATTTTTCTTTTTCTTCGTTGAACATTTTCTTCGCTGCACGGAAT
TCTTTTAATGTCGCAACCATTGGGAACATGATGCGTAAGTTACCATGAACAGAAGCGCGCAACAATGCACGTAAT
TGTGTACGGAACATGTCATCGCCTAGTTCGGATAGACTAATACGCAATGCACGATAACCCAAGAACGGATCNTTT
TTCTTAA

SEQ ID NO. 378 Staphylococcus saprophyticus

TCGTAAGAAGCTTCTATTACTTGTTTTACTAAACGTAATATTGAAGGATTATATGGTTGATACAAGTAAGAAACA
CGTTCTGACATTCTATCAGCAGCCATTGTATATTGAATTAAATCATTCGTTCCTATACTGAAGAAATCAACTTCT
TTAGCAAATACATCTGCCAACGCAGCAGTAGAAGGAATTTCTACCATAATACCAAGTTCGATATCATCAGAAACT
TCAATGCCTTCATTTGTTAAGTTATCTTTTTCTTCAAGTAACAATGCTTTAGCATCACGGAACTCTTGGATTGTA
GCTACCATAGGGAACATGATATTCAATTTACCAAAAGCAGATGCACGTAATAATGCACGCAACTGTGGTCTGAAA
ATATCAGGTTGATCTAGGCATAAACGGATAGCACGGTAACCCAAGAACGGATCATTCTCTTA

SEQ ID NO. 379 Staphylococcus haemolyticus

GAAGCTTCATGACTTGTTTAACCAAGCGTAAAATAGCTGGGTTATAAGGTTGGTATAAGTATGAAACGCGTTCTG
ACATACGGTCAGCTGCCATAGTATATTGAATTAAATCATTAGTACCAATACTGAAGAAATCCATTTCTTTAGCAA
AGATATCAGCTAAAGCAGCTGTAGATGGAATCTCAACCATGATACCTAACTCAATTTCATCAGAAACGTCATGAC
CATCATTTTTAAGATTTTCTTTTTCTTCTAACAGAATGGCTTTAGCATCACGGAATTCATTGATTGTAGCTACCA
TTGGGAACATAATGTTTAATTTACCGTAAGCTGACGCGCGTAATAATGCACGTAATTGTGTTCTGAAAATATCTT
GTTGATCTAAGCATAGACGAATTGCTCTGTAACCCAAGAACGGNTCNTTCTCTTA

SEQ ID NO. 380 Enterococcus flavescens

NGCATGCGCTGAGTCGATCACGTTTTTGATCAAACGTAAAATTGATGGGTTGTATGGTTGGTACAAGTAAGACAC
GCGCTCGTTCATGCGGTCTGCAGCCATTGTGTATTGGATCAAGTCATTGGTACCAATACTGAAGAAGTCAACTTC
CTTCGCAAACTTGTCTGCTAAGACAGCAGCTGCTGGAATTTCGATCATGATTCCGACTTGGATCTCGTTAGAAAC
CTCAACGCCTTCGTCAATCAATTTTTGACGCTCTTCTTCATACATTTTCTTCGCAGTACGGAACTCTTTCAATGT
TGCCACCATTGGGAACATGATACGTAAGTTGCCGTGAGCAGAAGCACGTAACAACGCACGAAGTTGGGTACGGAA
CATGTCATCCCCAAGTTCAGATAAGCTGATACGCAATGCACGATAGCCCAAGAACGGATATTNNTCNTA

SEQ ID NO. 381 Enterococcus casseliflavus

GCGCTGAGTCGATACGTTTTTGATCAAACGTAAAATTGATGGGTTGTATGGTTGGTACAAGTAAGACACGCGCTC
GTTCATGCGGTCTGCAGCCATGGTGTATTGGATCAAGTCATTGGTACCAATACTGAAGAAGTCAACTTCCTTCGC
AAACTTGTCTGCTAAGACAGCAGCTGCTGGAATTTCGATCATGATTCCGACTTGGATCTCGTTAGAAACCTCAAC
GCCTTCGTCAATCAATTTTTGACGCTCTTCTTCATACATTTTCTTCGCAGTACGGAACTCTTTCAATGTTGCCAC
CATTGGGAACATGATACGTAAGTTGCCGTGAGCAGAAGCACGTAACAACGCACGAAGTTGGGTACGGAACATGTC
ATCCCCAAGTTCAGATAAGCTGATACGCAATGCACGATAGCCCAAGAACGGATNATTTNTCTTA

SEQ ID NO. 382 Enterococcus gallinarum

ACCTTNGCATGTGCTGAATCGATTACGTTTTTGATCAACGTAGAATAGATGGGTTATATGGTTGGTAAAGATATG
AAACTTGTTCATTCATACGGTCTGCAGCCATTGTGTATTGGATCAAGTCATTGGTACCAATACTGAAGAAGTCTA
CTTCCTTGGCAAATTTGTCAGCTAAGACAGCTGCTGCAGGAATTTCGATCATGATACCTACTTGAATATCTTCAG
AGACGGTTACGCCTTCATCGATCAATTTTTGACGTTCTTCTTCGTACATTTTTTTCGCAGCACGGAACTCTTTCA
ATGTTGCCACCATTGGGAACATAATCCGCAAGTTTCCGTGAGCAGAAGCACGTAACAGCGCACGAAGTTGTGTAC
GGAACATGCCGTCACCCAACTCAGACAAACTGATACGCAATGCACGATAGCCCAAGAACGGATCTTTNTCCNTTA

SEQ ID NO. 383 Enterococcus raffinosus

NTGTGCTGCATCAATGACGTTTTTAATCAAACGTAAGATTGATGGGTTATATGGTTGATACAGGTATGAAACGCG
TTCGTTCATACGGTCAGCAGCCATTGTGTATTGAATCAAGTCGTTTGTTCCGATACTAAAGAAGTCAACTTCTTT
TGCAAACTTGTCAGCTAGAACAGCTGCGGCAGGGATCTCGATCATGATTCCGACTTGAATCGTATCAGAAACCTT
CACGCCTTCGTTAACAAGCTTTTCTTTTTCTTCGTTGAACATTTTCTTCGCTGCACGGAACTCTTTTAATGTTGC
AACCATTGGGAACATGATGCGTAAATTGCCATGAACTGAAGCGCGTAACAATGCACGTAACTGTGTACGGAACAT
ATCGTCGCCTAATTCAGATAAACTGATACGCAATGCACGATAACCCAAGAACGGATNNTTCTNCGTAA

SEQ ID NO. 384 Enterococcus villorum

GGNCTCTCGTCGTNAGCTGCATCAATCACGTTTTTGATTAAACGTAAAATTGATGGGTTATAAGGTTGGTATAAG
TATGAAACGCGTTCGTTCATACGGTCAGCTGCCATAGTGTATTGAATCAAATCATTTGTTCCTACTGAGAAGAAG
TCAACTTCCTTCGCAAACTTGTCAGCTAAAACAGCAGCTGCAGGAATTTCAATCATAATGCCGACTTGGATCGTA
TCAGATACTTCCACGCCTTCATTCAATAACTTTTGTTTTTCATCTTCAAAGATTGCTTTTGCCCCACGGAATTCT
TTAAGTGTCGCCACCATTGGGAACATGATACGTAAGTTACCGTGAACGGATGCACGCAATAACGCACGCATTTGT
GTACGGAACATTTCGTCTCCTTGTTCAGAAAGACTGATACGTAATGCACGATATCCNANGAACGGNTTATTTTTC
NTA

SEQ ID NO. 385 Clostridium difficile

TTTNNGGANGGCNTCTNTCGTANGCATTGTCTATANCAGTCTTTATAAGTCTTAAAACAGCTGGATNAAATTGAT
TGTAAAGNTAACTTATCTTTTGATTCATTCTATCAACTGCACAAGTGTATTGAATTAAATCATTAGTTCCTATAG
AGAAGAAATCTACGTGTTTAGCCAATACATCAGATATCACAGCAGCAGATGGAACTTCTATCATCATACCAATTT
CTACATCTTTAGCATAAGCCACACCTTCAGAATCAAGTTCTGCTAAAACTTCTTTTACAACTTCTTTAGCTTGTA
ACAACTCTTCTAAAGATGAAATCATTGGGAACATGATTCTTAATCTTCCATGAACACTAGCTCTATATAAAGCTC
TCAATTGAGTCTTAAATATATCTTTTCTATCTAGGCAAAGTCTTATTGCTCTGTAACCCAAGAACGG

SEQ ID NO. 386 Streptococcus mitis

NGCGTGAGCTGCCTTGATAACGTTGTTGATCAAGCGAAGGATTGATGGGTTATATGGTTGGTAAAGGTATGAAAC
TTGCTCGTTCATACGGTCTGCTGCCATTGAGTATTGGATCAAGTCGTTTGTTCCAATTGACATGAAGTCTACTTC
TTTTGCAAATTGGTCTGCAAGCATCGCTGCTGCAGGGATTTCAATCATGATACCAACTTGGATATCATCCGCAAC
TGCAACACCTTCAGCAAGAAGGTTTGCCTTTTCTTCTTCATAAACTGCTTTGGCTGCACGGAATTCTTTCAAAAG
AGCAACCATTGGGAACATGATACGCAATTGACCATGAACAGAAGCACGAAGAAGAGCACGGATTTGTGTACGGAA
CATTGCATCTCCAGTTTCAGAAATAGAGATACGAAGGGCACGGAATCCNAAGAACGGATATTTTTCNTA

SEQ ID NO. 387 Bacillus halodurans

NCCTTCGCTATGAGCTGCTTTAATAACCATATCGACGAGGCGTAAAATCGCAGGGTGGTATGGCTGATACAGGTA
GGAGACTCGCTCATTCATGCGGTCAGCAGCCATCGTATATTGAATTAAGTCGTTCGTTCCGATACTGAAAAAGTC
TACTTCTTTTGCAAAAAGATTAGCCGCTACCGCCGTCGATGGGATTTCTACCATGATTCCCACTTCAATTGAATC
GGATACGTCCACTCCTTCACTAAGAAGCTTGTCTTTTTCCTCTTGCATGATCGCTTTTGCTTGGCGAAGCTCTTC
AAGGGTGGCGATCATTGGAAACATCACCTTTAAGTTACCGTATGTGCTTGCGCGAAGCAAGGCACGGAGTTGGGT
CCGGAAAATATCTTGTTTTTCAAGGCACAGACGAATCGCCCGGAAACCNAAGAACGGATNNTTNTTCNTAA

SEQ ID NO. 388 Bacillus weihenstephanensis

NTGAGCAGCATCGATAACCATTTTTACAAGACGTAAAATAGATGGGTTATATGGTTGGTATAAGTAAGCTACTTG
TTCGTTCATACGGTCTGCAGCCATTGTGTATTGGATTAAGTCATTTGTTCCAATAGAGAAGAAATCAACTTCTTT
TGCGAACTGATCAGCTAATACTGCTGAAGCTGGAATTTCAACCATCATACCAACTTCAATAGAATCAGAAACAGT
TGTACCCGCTTTAACAAGTCTTTCTTTCTCTTCTAATAAGATTGCTTTCGCTTGACGGAACTCATCAAGAGTTGC
AATCATTGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCACGAAGTTGTGTACGGAACAC
ATCTTGCTCATCAAGACATAAGCGAATTGCACGGTATCCCAAGAACGGATCNTTCTCNTTA

SEQ ID NO. 389 Streptococcus species

CNNANTTNCCTTCGCGTGAGCTGCTTTGATAACGTTGTTAATCAACGAAGGATTGATGGGTTGTATGGTTGGTAA
AGGTATGAAACTTGTTCGTTCATACGGTCAGCAGCCATTGTGTATTGGATAAGGTCGTTTGTTCCGATTGAGAAG
AAGTCAACTTCTTTCGCAAATTGGTCAGCAAGCATAGCTGCAGCTGGGATTTCAATCATGATACCAACTTGGATA
TCATCTGAAACGGCAACACCTTCAGCTTTAAGGTTTGCTTTTTCTTCATCAAAGATTGCTTTAGCAGCACGGAAT
TCTTTAAGAAGAGCAACCATTGGGAACATGATACGAAGTTGTCCGTGTACAGATGCACGAAGAAGTGCACGGATT
TGTGTACGGAACATTGCATTTCCTGTTTCTGAGATAGAAATACGAAGTGCACGGAATCCNAAGAACGGATCCTTT
TTCCTTAA

SEQ ID NO. 390 Streptococcus gordonii

NTGCCTTCGCATGAGCCGCCTTGATAACATTGTTGATCAAGCGAAGGATAGATGGGTTATAAGGTTGATAGAGGT
AAGAGACTTGTTCATTCATCCGGTCAGCTGCCATAGTGTACTGGATCAAGTCGTTGGTACCAATTGAGAAGAAGT
CAACTTCCTTGGCAAATTGATCCGCCAACATAGCTGCTGCTGGAATTTCAATCATGATACCCACTTGAATGTTAT
CCGCTACAGCAACACCTTCAGCTTGCAATTTCGCTTTTTCTTCTTCGTAAACTGCTTTAGCCTTACGGAATTCTG
TTAGAAGGGCTACCATTGGGAACATGATACGTAATTGTCCATGTACAGACGCACGTAAGAGAGCGCGGATTTGTG
TACGGAACATAGCATTACCAGTTTCAGAGATAGAGATACGCAAAGCACGGAAGCCNAAGAACGGTCNTTTT

SEQ ID NO. 391 Streptococcus canis

CNCGTGAGCTGCTTTGATAACGTTGTTAATCAAACGAAGGATTGATGGGTTGTATGGTTGGTAAAGGTATGAAAC
TTGTTCGTTCATACGGTCAGCAGCCATTGTGTATTGGATAAGGTCGTTTGTTCCGATTGAGAAGAAGTCAACTTC
TTTCGCAAATTGGTCAGCAAGCATAGCTGCAGCTGGGATTTCAATCATGATACCAACTTCGATATCATCTGAAAC
GGCAACACCTTCAGCTTTAAGGTTTGCTTTTTCTTCATCAAAGATTGCTTTAGCAGCACGGAATTCTTTAAGAAG
AGCAACCATTGGGAACATGATACGAAGTTGTCCGTGTACAGATGCACGAAGAAGTGCACGGATTTGTGTACGGAA
CATTGCATTTCCTGTTTCTGAGATAGAAATACGAAGTGCACGGAATCCNAAGAACGGTCNTTTTTCTCTAA

SEQ ID NO. 392 Bacillus pumilus

CNTACGCTGCTTCATAACAAGCGTAATCAAACGTAAAATCGCTGGATTGTAAGGCTGGTAAAGATAAGACACTCG
TTCGTTCATTCGATCAGCAGCCATTGTGTATTGAATCAAATCATTTGTTCCAATACTGAAGAAATCAACTTCTTT
TGCGAATTGGTCTGCGATGACAGCGGTTGATGGAATTTCTACCATTATACCGATTTCAATGGAATCGGATACGTC
TGTACCAGCGGCAACCAATGCTTCTTTTTCTTCAAGTAAAATGGCTTTTGCTTCTCTAAATTCTGATAATGTCGC
GATCATAGGGAACATGATTTTCAAGTTTCCATATGTACTTGCACGAAGTAAGGCGCGTAGTTGTGTTCTGAAAAT
CTCCTGTTCTTCGAGGCAAAGGCGGATCGCTCTAAAGCCNAAGAACGGATNTTTTTCNTTAA

SEQ ID NO. 393 Bacillus species

TGAGCGCATCGATAACCATTTTTACAAGACGTAAAATAGATGGGTTATATGGTTGGTATAAGTATGATACTTGTT
CGTTCATACGGTCTGCAGCCATTGTGTATTGGATTAAATCATTTGTTCCGATAGAGAAGAAGTCAACTTCTTTCG
CGAATTGATCTGCTAATACTGCTGAAGCTGGGATTTCAACCATCATACCAACTTCAATAGAATCAGAAACAGTTG
TACCCGCTTCTACAAGTTTCGCTTTCTCTTCTAATAAAATTGCTTTTGCTTGACGGAACTCATCAAGAGTTGCAA

TCATTGGGAACATAATTTTTAAGTTACCGTATACGCTAGCACGAAGTAATGCACGAAGTTGTGTACGGAACACAT
CTTGCTCATCAAGACATAAGCGAATTGCACGGTATCCCAAGAACGGATCCNTTNTNCTTTAA

SEQ ID NO. 394 Lactococcus lactis

GTGAGCTGCTTTGATNCATTGTTAATCAAACGAAGGATTGATGGATTGTAAGGTTGGTAAAGGTAAGAAACTTGT
TCATTCATACGGTCTGCAGCCATTGTATATTGGATGAGGTCGTTTGTACCAATTGAGAAGAAATCAACTTCCTTA
GCAAATTGGTCTGCAAGCATTGCTGCTGCTGGAATTTCAATCATGATACCTACTTCGATACCATCTGCAACTGGA
ACACCTTCAGCAATCAATTTTGCTTTTTCTTCGTCATAAATCTTCTTAGCTGCACGGAACTCAGTTACGAGAGCA
ACCATTGGGAACATGATACGAAGTTGTCCGTGTACAGAAGCACGCAAGAGTGCACGCAATTGTGTACGGAACATT
CCGTCACCAGCTGTTGAAAGGCTGATACGAAGTGCACGCCATCCCANGAACGGTNNTTTTTNTTTTAA

SEQ ID NO. 395 Bacillus firmus

TCCAGGANGGGTTCTNTCNTANGCTGCGTCAATTACCATTTTAACTAAACGCAGGATTGCAGGATTATACGGCTG
GTAAAGGTAAGAAACACGCTCATTCATGCGGTCTGCAGCCATTGTGTACTGAATTAGATCATTAGTGCCAACACT
GAAGAAATCGACTTCTTTAGCAAACTGATCAGCCATAACAGCAGTTGAAGGAATTTCAACCATAATTCCAATTTC
AATGTTGTCGGCAACCTCTGCTCCTTCGCTCACAAGCTTTTGTTTTTCTTCTTCAAGGATTGCTTTGCCCTGACG
GAATTCTTCAAGAGTGGCAATCATAGGGAACATGATTTTAAGGTTTCCATAGGTGCTTGCTCTTAATAAAGCCCT
TAATTGCGTCCTGAACATATCCTGTTCTTCCAGACACAGACGAATCGCCCGGAAGCCCAAGAACGGATTCATTNT
CTTA

SEQ ID NO. 396 Haemophilus influenzae

TGAGAGGCATCAATCACTTGTTTAATTAAACCAAGCACAGAGGGGTGCATCGGATTATAAAGATGGGAAATAAAC
TCATTACCGCGATCTACAGCCAAAGTATATTGAGTTAAATCGTTAGTACCGATACTAAAGAAATCCACTTCTTTT
GCTAAAAATTTTGCATTTACTGCGGCAGAGGGGGTTTCGACCATTACACCAACTTGGATATTATTATCAAACAGT
CTCCCCTCTTCACGTAATTCCGCTTTTAATGTTTCAATAACCGCTTTTAATTCCCGAATTTCTTCTACAGAAATA
ATCATCGGGAACATTACCGCCAATTTACCAAAAGCTGAAGCACGTAACACCGCGCGTAATTGTGCATTTAAAATT
TCACGACGATCTAATGCAATGCGAATCGCACGCCATCCCAAGAACGGATNNTTTTTCTT

SEQ ID NO. 397 Streptococcus bovis

TGAGCTGCTTTGATAACGTTGTTAATCAAACGAAGGATTGATGGGTTATATGGTTGGTAAAGGTATGAAACTTGT
TCATTCATACGGTCAGCAGCCATTGTGTATTGGATAAGGTCGTTTGTTCCGATTGAGAAGAAGTCAACTTCTTTT
GCAAATTGGTCAGCAAGCATAGCTGCAGCTGGGATTTCAATCATGATACCAACTTGGATATCATCTGAAACGGCA
ACACCTTCAGCTTTAAGGTTAGCTTTTTCTTCATCAAAGATTGCTTTAGCAGCACGGAATTCTTTAAGAAGTGCA
ACCATTGGGAACATGATACGAAGTTGTCCGTGTACAGATGCACGAAGAAGTGCACGGATTTGTGTACGGAACATT
GCATTTCCTGTTTCTGAGATAGAAATACGAAGTGCACGGAATCCNAAGAACGGTCCNTTTTTNCTTA

SEQ ID NO. 398 Enterococcus durans

TGTGCTGCATCAATCACGTTTTTGATCAAACGTAAAATTGAAGGGTTATAAGGTTGATACAAGTAAGATACACGT
TCGTTCATGCGGTCAGCTGCCATTGTGTATTGAATCAAGTCATTCGTACCTACTGAGAAGAAGTCAACTTCCTTC
GCAAACTTATCTGCTAAGACAGCTGCTGCAGGGATTTCAATCATGATGCCGACTTGGATCGTATCAGATACTTCC

ACGCCTTCGCTCACTAATTTTTGTTTTTCTTCTTCAAAGATTGCTTTCGCTGCACGGAATTCTTTAAGAGTCGCT
ACCATTGGGAACATGATGCGTAAGTTTCCATGAACAGATGCACGTAACAATGCGCGCATTTGTGTACGGAACATT
TCGTCACCTAATTCAGACAAGCTGATACGTAGCGCACGATAGCCCAAGAACGGATNNTTTTCCCTTAA

SEQ ID NO. 399 Streptococcus sanguis

CGCATGAGCTGCCTTGATAACATTGTTAATCAAGCGAAGGATAGATGGATTGTAAGGTTGATAGAGGTAAGAGAC
TTGCTCATTCATCCGGTCAGCCGCCATAGTGTACTGAATCAAGTCGTTAGTACCAATTGAGAAGAAGTCTACTTC
CTTGGCAAATTGATCCGCCAACATAGCTGCTGCTGGGATTTCAATCATGATACCCACTTGGATATTATCTGCTAC
TGCAACGCCTTCAGCTTGCAGCTTAGCTTTTTCTTCGTCATAAACCGCTTTAGCTTTGCGGAATTCTGTCAGAAG
GGCCACCATTGGGAACATGATACGCAATTGTCCATGTACAGAAGCACGCAAGAGAGCGCGGATTTGTGTACGGAA
CATAGCATCGCCAGTTTCAGAGATAGAGATACGCAAAGCACGGAAACCAAAGAACGGTNNTTTTTNTCTTTAAAA

SEQ ID NO. 400 Escherichia coli

TCCTTTACCTTCTGCATGAGAGCATCAATAACTTGCTTGATCAAGTTCAGTACGGACGGTGACATTGGCTGGTAG
AGATGTGAAATCATATCATTACCACGGTCAACTGCCAGGGTGTACTGCGTTAAATCATTGGTGCCGATACTAAAG
AAATCAACTTCTTTGGCTAAATGACGCGCAATGGTCGCGGCTGCTGGTGTTTCCACCATTACGCCGATCTCAATT
GACTCGTCAAATGCTTTACCTTCGTCACGCAATTCCTGTTTGTAGATCTCGATCTCTTTCTTCAGTGCACGCACT
TCTTCAACAGAGATGATCATCGGGAACATAATGCGCAGCTTACCGAAAGCAGAGGCACGCAGAATCGCACGCACC
TGGTCACGCAGGATTTCTTTACGATCCATGGCGATACGCACTGCACGCCAGCCCAAGAACGGATNNTTTTTTCTT
TAA

SEQ ID NO. 401 Serratia liquefasciens

NTGNCTTCTGCATGAGNATGCATCAATAACCTGTTTGATCAGGCCAAGCACTGATGGGGACATCGGGTTATAGAG
ATGAGAAATCAGCTCATTGCCGCGATCTACCGCCAGAGTATACTGGGTTAGATCGTTTGTCCCAATACTAAAGAA
GTCGACTTCTTTCGCCAGGTGATGAGCAATCACTGCCGCGGCCGGTGTTTCCACCATTACGCCCACTTCAATGGT
CTCGTCAAAGGCCTTGGATTCTTCACGCAGCTGCGCCTTCAGCGTCTCGATTTCACCTTTCAGATCGCGGACTTC
TTCCACGGAAATGATCATCGGGAACATGATGCGCAGTTTGCCGAACGCGGAAGCGCGCAGGATGGCGCGCAGTTG
CGCGTGCAGGATTTCTCTGCGGTCCATGGCGATACGAATCGCGCGCCAGCCNAAGAACGNTTNTTTTTANTTTA

SEQ ID NO. 402 Proteus mirabilis

GTGTGATGCATCAATCACCTGTTTAATCAGATTAAGTACAGCAGGTGACATTGGATTATATAGATGAGATATCAG
CTCATTTCCACGGTCTACAGCCAGAGTATATTGTGTTAGATCGTTAGTCCCAATACTGAAAAAGTCAACTTCTTT
TGCCATATGGCGAGCCATAACAGCCGCTGCTGGCGTTTCAACCATAACACCGACTTCGATAGATTCATCAAAAGG
CTTATTTTCTTCACGAAGCTGGCTTTTCAGTATTTCAAGTTCCGCTTTCAATGCTCGGATCTCTTCAACAGAGAT
AATCATTGGAAACATAATACGTAGTTTACCAAAAGCAGACGCTCTTAAGATAGCACGTAATTGTGGATGAAGGAT
CTCTTTGCGGTCAAGACAAATACGAATTGCACGCCAACCCAAGAACGGAT

SEQ ID NO. 403 Proteus vulgaris

CCTTCTGCATGTGATGCATCAATAACCTGTTTTATCAGGTTAAGTACTGCTGGTGACATTGGATTATACAGATGA
GATATCAGCTCATTTCCACGGTCTACAGCCAGAGTATATTGTGTTAGATCGTTAGTCCCAATACTGAAAAAGTCA

ACTTCTTTTGCCATGAGACGTGCCATTACGGCCGCCGCAGGGGTTTCAACCATGACACCGACTTCGATAGACTCA
TCGAAAGTTTTGTTTTCTGCACGAAGCTGGCTTTTCAGTATTTCAAGTTCTGCTTTCAATGCGCGAATCTCTTCA
ATAGAGATAATCATTGGAAACATAATGCGTAGTTTACCAAAAGCAGATGCTCTTAAGATAGCACGTAATTGCGAA
TGAAGGATCTCTTTACGGTCAAGACAAATACGAATTGCTCTCCAACCCAAGAACGGTC

Figure 16 represents marker III (SpyM_0902 & SpyM_0903) sequences amplified from Gram-positive bacteria (SEQ ID NOs 404-412).

SEQ ID NO. 404 Streptococcus pyogenes

TTATTAGGCGCCGAAGGGGCAAGGCATACTGCTCAATCTCTCAGGCAAAAGGACAGAAGGTAAAATACAAACACC
ATTAAGAACAGTCTTAGTCTTTTTTGTGTTTGCTGTTTTATCATTGCTTCAGAAGTTGTCTCAAAGAAAGAGATA
GCTTTTTTCTTTTGGCGTCTTCGATGACTTTTAGGAGAGAAAGATGATAGCACTCGTTAAATTAATTGATAACCT
TGTTTGGGGACCGCCCCTCTTAATTTTATTGGTTGGGACGGGGATTTACCTTACCAGTCATTTAGGATTAATTCA
AATCTTAAAACTACCAAGAGCCTTTAAACTCATTTTTTCAGATGACGAAGGACATGGAGATATTTCATCCTTTGC
TGCTCTTGCAACTGCCCTTGCCGCTACTGTCGGAACTGGTAACATTGTTGGGGTTGCCACTGCTATCAAGTCTGG
TGGTCCTGGAGCGCTCTTTTGGATGTGGGTTGCCGCTTTTTTTGGAATGGCCC

SEQ ID NO. 405 Streptococcus oralis

CCGTAAAGGCACCGAAGGGGCAAGGCAGGTAACTGCTCAAACTCTCAGGTAAAAGGACAGAGCTAGGATAGACCG
CTTTTTGGCATTTATCTAAGCATTCCAGAGTACATGTATCTTGCATGTACTCTTTCTTTTGGGGTTGAAAGATAG
GAGAAGGACATGTTAGAATTGCTTAAAGCGCTTGATGCTTTTGCTTGGGGGCCTCCCCTCTTGATCTTATTGGTC
GGAACGGGTATCTATTTGACCATCCGACTGGGCCTTTTGCAGGTTACTCGTCTCCCTAAGGCCTTTCAGTTGATC
TTTACCAAGGACAAGGGGCACGGCGATGTGTCGAGCTTTGCTGCTCTCTGTACGGCTCTAGCAGCCACAGTTGGT
ACGGGAAATATCATCGGGGTAGCGACAGCCATTAAGGTTGGAGGACCAGGGGCCCTCTTTTGGATGTGGATGGCG
GCCTTCTTTGGAATGGCCC

SEQ ID NO. 406 Streptococcus faecalis

GTAAAGGCACCGAAGGGGCAAGGCAGGTAACTGCTCAAACTCTCAGGTAAAAGGACAGAGCTAGGATAGACCGCT
TTTTGGCATTTATCTAAGCATTCCAGAGTACATGTATCTTGCATGTACTCTTTCTTTTGGGGTTGAAAGATAGGA
GAAGGACATGTTAGAATTGCTTAAAGCGCTTGATGCTTTTGCTTGGGGGCCTCCCCTCTTGATCTTATTGGTCGG
AACGGGTATCTATTTGACCATCCGACTGGGCCTTTTGCAGGTTACTCGTCTCCCTAAGGCCTTTCAGTTGATCTT
TACCAAGGACAAGGGGCACGGCGATGTGTCGAGCTTTGCTGCTCTCTGTACGGCTCTAGCAGCCACAGTTGGTAC
GGGAAATATCATCGGGGTAGCGACAGCCATTAAGGTTGGAGGACCAGGGGCCCTCTTTTGGATGTGGATGGCGGC
CTTCTTTGGAATGGCCC

SEQ ID NO. 407 Streptococcus agalactiae

TATAAGTAGCAACATCTTTGTATTGACACCAAGATGTGCTCTAGGCGCCGAAGGGGCAAGAAGAGTAAAACAACT
CCTCCAATCTCTCAGGCAAAAGGACAGAAGCTAAAAGCCAATATTAATAATGAGTAGTAAGCTTATTAAGTTTAC
TACTACCTTTATTTGTGCGCTTTTTAGCTAGCATCTTTCAGAAGTTATCTCTTTTAGAGATAACTTTTTTCGTTT
CATTACAGAATCCATAGGTATGTCATGTATCAAAGGAGAACATATGCTAACACTTTTTACTCATATCAATAGCTT
CGTTTGGGGTCCACCTTTACTTGCTTTATTAGTCGGAACAGGTATTTACCTATCATTTCGCTTAGGTTTTGTTCA
ATTGAGACAACTTTCTAGAGCTTTCAAATTGATTTTCCGAGAAGATAACGGACAAGGGGATATTTCAAGTTATGC
TGCTCTTGCAACTGCTCTTGCTGCAACGGTAGGGACAGGTAATATCGTTGGTGTGGCTACGGCTATTAAATCTGG
AGGACCAGGAGCTTTGTTTTGGATGTGGGTAGCCGCCTTTTTTGGAATGGCCC

SEQ ID NO. 408 Streptococcus pneumoniae

GTAAAGGCACCGAAGGGGCAAGGCAGGCAACTGCTCAAACTCTCAGGTAAAAGGACAGAGCTAGGATAGACCGCT
TTTTAGCATTTATCTAAGCATTCCAGAGTACATGTATCTTGCATGTGCTCTTTCTTTTGGGGTTGAAACGATAGG
AGAAGGAAATGTTAGAATTGCTTAAATCAATCGATGCTTTTGCTTGGGGACCGCCCCTCTTGATTTTATTGGTCG
GAACAGGGATTTACCTAACCATGCGGCTAGGACTCTTGCAGGTTTTGCGTCTGCCCAAGGCCTTTCAGCTTATTT
TTATCCAGGATAAGGGACATGGTGATGTATCCAGTTTTACAGCTCTGTGTACAGCCTTGGCATCAACTGTTGGAA
CAGGAAATATCATAGGAGTTGCGACGGCTATCAAGGTTGGTGGACCAGGAGCTCTATTTTGGATGTGGATGGCGG
TTTTCTTTGGAATGGCCC

SEQ ID NO. 409 Enterococcus durans

NGNCCGAGGGGCAAGGTCAGNACAACTGCTCAAACTCTCAGGTAAAAGGACAGAGCTAGGATAGACCGCTTTTTA
GCATTTATCTAAGCATTCCAGAGTACATGTATCTTGCATGTGCTCTTTCTTTTGGGGTTGAAACGATAGGAGAAG
GAAATGTTAGAATTGCTTAAATCAATCGATGCTTTTGCTTGGGGACCGCCCCTCTTGATTTTATTGGTCGGAACA
GGGATTTACCTAACCATGCGGCTAGGACTCTTGCAGGTTTTGCGTCTGCCCAAGGCCTTTCAGCTTATTTTTATC
CAGGATAAGGGACATGGTGATGTATCCAGTTTTACAGCTCTGTGTACAGCCTTGGCATCAACTGTTGGAACAGGA
AATATCATAGGAGTTGCGACGGCTATCAAGGTTGGTGGACCAGGAGCTCTATTTTGGATGTGGATGGCGGTTTTC
TTTGGAATGGCCC

SEQ ID NO. 410 Streptococcus anthracis

CCCCCTCTCGCTTTAAATAGCGTAGAGGAAAACGAGCACCGAAGGAGCAAATCCGCTACTATAGCGGATAATCTC
TCAGGTAAAAGGACAGAGACAAGCGAAAGAAAATGCCGATTTGTATCGGTTTATTTTTCTATCCCTTGTTTCTCC
AGAGACCATTTCATTTACTTGAAGTGGTTTTTATTTTTTCTAAAAAAGGAGAATAAAGATGGAGACAGTAAGTAA
AGTATTAGAACAAATCAATCACTATGTGTGGGGATTACCAACGTTATTGTTACTCGTTGGTACTGGTATTATTCT
CACAGTGCGTTTAAAAGGTTTACAGTTTAGTAAACTATTATACGCTCACAAACTAGCTTTTAAAAAATCAGAAGA
TACATCTTCCTCTGGAGATATTAGCCACTTCCAAGCGCTTATGACAGCTATGGCGGCAACGATTGGTATGGGAAA
TATAGCTGGTGTTGCAACTGCTGTGACGATCGGTGGACCTGGTGCAATCTTTTGGATGTGGATTACTGCTTTGTT
TGGAATGGCCC

SEQ ID NO. 411 Bacillus cereus

CCCCCTCACGCCTATCATATAGTGCAGAGGAAACAGAGCACCGAAGGAGCAAATCCGCTGTATTAGCGGATAATC
TCTCAGGTAAAAGGACAGAGACAAGCGAAAGAAAACGCCGATTTGTATCGGTTTATTTTTCTATTCCTTGTTTCT
CCAGAGACCATTTCATTTATGTGAAGTGGTTTTTTATTTTTTCTAAAAGGAGAATAAAGATGGAGACAGTAAGTA
AAGTATTAGAACAAATCAATCACTACGTATGGGGATTACCAACCTTATTCCTTTTAGTCGGGACTGGAATCATTC
TCACAGTGCGTCTAAAAGGTTTGCAGTTTAGTAAACTGTTATACGCTCACAAACTAGCATTTCGAAAATCAGAAG
ATACATCTTCTTTGGGAGATATTAGTCATTTCCAAGCACTCATGACAGCAATGGCCGCCACCATCGGGATGGGAA
ATATAGCTGGTGTCGCAACAGCTGTTACAATCGGTGGACCGGGGGCAATATTTTGGATGTGGATCACTGCCTTGT
TTGGAATGGCCC

SEQ ID NO. 412 Streptococcus mutans

ACTGATAATTGACGGACTTCTGGAGAGACCTACTAGGCGCCGAAGGGGCAAGGCTGTTTGCTCAAACTCTCAGGC
AAAAGGACAGAAAAGAAAAAAAGAATTTTTAATGTTGAAACAATTCTTATCTTCTAACTCTAGAGGTATCGTCAA
GTATTGACAACCTCTTTTTTGATTTCCATTTCGGTTTATGAGGAGAAAAGTTTATATGTTAACATTTTTTAAAGC
TCTAGACAGCCTTGTCTGGGGTGCTCCCCTATTAGTTCTTTTAGTCGGTACTGGAATTTATTTGAGTACTCGCTT
AAGATTATTGCAGGTGTTGAAACTCCCTTTAGCCTTTAAACTCATCTTTGCCGAGGACAAAGGGGAAGGTGATAT
TTCGAGTTTTGCGGCTTTAGCTACCGCTCTTGCTGCCACTGTTGGAACTGGAAATATCGTTGGTGTTGCCACTGC
AATCAAAGCTGGCGGTCCGGGAGCACTCTTTTGGATGTGGATAGCAGCTTTTTTTGGTATGGCAACTAAATATGC
CGAAGGTCTTCTGGCTATAAAATACCGTACTAAGGA

Figure 17 represents marker IV (Spy1527, a putative GTP-binding factor plus 160 nt downstream) sequences amplified from Gram-positive bacteria (SEQ ID NOs 413-425).

SEQ ID NO. 413 Listeria monocytogenes

GTTAGAAAAAGGAAGTTCTATTGTAGCATCGCCAAAAATCCATCAAACCTTATTAGATAACTACCTGCCTTAAAG
AAAGCGCTCAACATAAAAAAAACTTGTTTTCAGAAAATAAAAATCGTGCCAAATCGGCTCAGCTATGCTATAATAG
GTAAGTTGATTTAAACGAGACGATAGCGACGGAGGAAAATAAATCTATTTTCCTCTTTCTTTTGGCTAATCTTCA
CGATAAATGTTTGGATTTTTAATTTAGGAGGAAACAAGATTGAATTTAAGAAATGATATTCGTAATGTAGCAATT
ATTGCCCACGTTGACCATGGTAAAACAACTCTAGTAGACCAATTATTACGCCAGTCAGGCACATTCCGCGACAAT
GAAACAGTTGCAGAACGCGCAATGGACAACAATGATTTAGAAAGAGAACGCGGTATTACAATTTTAGCGAAAAAT
ACAGCGATTAAGTATGAAGATACACGTGTAAACATCATGGATACACCTGGACACGCCGATTTCGGTGGAGAAGTA
GAACGTATCATGAAAATGGTTGATGGTGTTCTTTTAGTAGTGGACGCGTATGAAGGTACGATGCCTCAAACACGT
TTTGTACTAAAAAAAGCACTAGAACAAAACCTAACTCCAATCGTAGTAGTAAACAAAATTGACCGTGACTTTGCT
CGCCCAGAAGAAGTTGTTGATGAAGTATTAGAATTATTCATCGAACTAGGCGCAAACGACGATCAATTAGAATTC
CCAGTTGTTTATGCTTCTGCAATCAACGGAACTTCAAGCTATGATTCCGATCCAGCAGAACAAAAAGAAACAATG
AAACCACTTTTAGACACAATTATCGAACATATCCCGGCTCCAGTTGATAATAGCGACGAACCATTACAATTCCAA
GTATCATTACTTGATTATAATGACTATGTTGGTCGTATCGGTATTGGCCGCGTATTCCGTGGAACAATGCACGTG
GGACAAACAGTTGCTTTAATTAAACTTGATGGCACAGTAAAACAATTCCGTGTAACGAAAATGTTCGGTTTCTTC
GGACTAAAACGTGACGAAATTAAAGAAGCAAAAGCTGGTGATTTAGTAGCATTAGCAGGTATGGAAGACATCTTC
GTTGGTGAAACAGTAACACCATTTGACCACCAAGAAGCACTTCCGTTATTACGTATTGATGAGCCAACCTTGCAA
ATGACTTTCGTAACAAATAACAGTCCTTTCGCTGGTCGTGAAGGTAAACACGTAACAAGCCGTAAAATTGAAGAA
CGTTTACTTGCAGAGCTTCAAACGGACGTATCTTTACGCGTAGAGCCAACAGCTTCCCCTGACGCTTGGGTAGTT
TCTGGTCGTGGTGAGCTTCATTTATCCATTTTGATCGAAACAATGCGTCGCGAAGGTTATGAATTACAAGTTTCT
AAACCAGAAGTAATCATCCGTGAAATTGATGGCGTGAAATGTGAACCAGTAGAAGATGTTCAAATTGATACTCCA
GAAGAATTCATGGGTTCCGTTATTGAATCTATCAGCCAACGTAAAGGCGAAATGAAAAACATGATTAACGATGGC
AACGGACAAGTTCGTTTACAATTCATGGTTCCAGCTCGTGGCTTAATCGGTTATACAACTGATTTCCTTTCAATG
ACTCGTGGTTATGGTATTATCAACCACACA

SEQ ID NO. 414 Listeria innocua

ATAAAAAAACTCATTTTCAGAAAATAAAAATAGTGCTAAATCCGCTTAGCTATGCTATAATAGGTAAGTTGATTT
AAACGAGACGATAGCGACGGAGGAAAATAAATCTATTTTCCTCTTTCTTTTGGCTAATCTTCACGATAAATGTTT
GGATTTTTAATTTAGGAGGAAACAAGATTGAATTTAAGAAACGATATTCGTAATGTAGCAATTATTGCCCACGTT
GACCATGGTAAAACTACACTAGTAGACCAATTACTACGCCAATCAGGTACTTTCCGCGACAATGAAACAGTTGCA
GAACGTGCAATGGACAACAATGATTTAGAAAGAGAACGCGGTATTACAATTTTAGCGAAAAATACAGCAATTAAG
TATGAAGATACACGCGTAAACATCATGGATACACCTGGACACGCCGATTTTGGTGGAGAAGTAGAACGTATCATG
AAAATGGTTGATGGTGTTCTTTTAGTAGTGGACGCGTATGAAGGTACTATGCCTCAAACACGTTTTGTACTAAAA
AAAGCACTAGAACAAAACCTAACTCCAATCGTAGTAGTAAACAAAATTGACCGTGACTTTGCTCGCCCAGAAGAA
GTTGTTGATGAAGTACTAGAATTATTCATCGAACTAGGTGCGAACGACGATCAATTAGAATTCCCAGTTGTTTAT
GCTTCTGCAATTAACGGAACTTCAAGCTTTGAATCCGACCCAGCAGAACAAAAAGAAACAATGAAACCACTTTTA

GACACTATTATTGAACATATTCCAGCTCCAGTTGATAACAGCGACGAGCCATTACAATTCCAAGTTTCTTTACTT
GATTATAATGACTATGTTGGTCGTATTGGTATTGGCCGCGTTTTCCGTGGAACAATGCACGTAGGACAAACAGTT
GCCTTAATTAAACTAGACGGCACAGTAAAACAATTCCGTGTAACGAAAATGTTCGGTTTCTTCGGACTAAAACGT
GACGAAATTAAAGAAGCAAAAGCGGGTGACTTAGTAGCACTTGCAGGAATGGAAGACATCTTCGTCGGTGAAACA
GTAACACCATTTGACCACCAAGAAGCACTTCCACTTTTACGTATTGATGAGCCAACCTTGCAAATGACTTTTGTA
ACAAATAACAGTCCTTTCGCAGGCCGTGAAGGTAAACACGTAACAAGCCGTAAAATTGAAGAACGCTTACTTGCA
GAACTTCAAACGGATGTATCTTTACGCGTTGAACCAACAGCTTCTCCAGACGCATGGGTAGTATCTGGTCGTGGT
GAGCTTCACTTGTCTATCTTAATTGAAACGATGCGTCGTGAAGGTTATGAGTTACAAGTTTCTAAACCAGAAGTA
ATCATCCGTGAAATCGATGGCGTGAAATGTGAACCAGTAGAAGACGTTCAAATTGATACTCCAGAAGAATTCATG
GGTTCAGTTATTGAATCTATCAGCCAACGTAAAGGCGAAATGAAAAACATGATTAACGACGGCAATGGCCAAGTT
CGTTTACAATTCATGGTTCCAGCTCGTGGATTAATCGGTTATACAACTGATTTCCTTTCAATGACACGTGGTTAT
GGTATTATCAACCATACATTCGATAGCTACCAACCAATCCAAAAA

SEQ ID NO. 415 Bacillus cereus

TTACTTTCACAAAAGTAAGAATACAACTATATTTTCATTCTTGCTTTTATTTTAATTGCTATTGTATCCCCTTCG
CTCTTATAATAGAGAAGGATTAAAAAGACATTAGGAGTTGGACATGTTGAAAAAACGACAAGATTTACGTAATAT
AGCAATTATTGCCCACGTTGACCATGGTAAAACAACACTTGTTGACCAGTTATTACGTCAAGCGGGGACTTTCCG
TGCGAACGAACACGTTGAAGAACGCGCAATGGATTCAAATGATCTAGAAAGAGAACGCGGTATTACAATTTTAGC
GAAAAATACAGCGATTCACTATGAAGATAAAAGAATTAACATTTTAGATACACCTGGTCACGCTGACTTCGGTGG
AGAAGTAGAACGTATCATGAAAATGGTTGATGGTGTTTTACTTGTTGTTGATGCATATGAAGGTTGTATGCCACA
AACACGATTTGTTTTAAAGAAAGCTCTTGAGCAAAACTTAACTCCAATCGTAGTTGTAAACAAAATTGACCGTGA
CTTCGCTCGTCCAGATGAAGTAGTTGATGAAGTAATCGACTTATTCATTGAGCTTGGTGCAAACGAAGATCAATT
AGAGTTCCCAGTTGTATTTGCATCAGCAATGAACGGAACAGCAAGCTTAGATTCAAATCCAGCAAATCAAGAAGA
GAATATGAAATCATTATTCGATACAATTATCGAACATATTCCAGCACCAATTGATAACAGCGAAGAGCCACTTCA
ATTCCAAGTAGCACTTCTTGATTACAACGACTACGTTGGACGTATTGGAGTTGGTCGCGTATTCCGCGGTACAAT
GAAGGTTGGACAACAAGTTGCTTTAATGAAAGTAGACGGAAGCGTGAAGCAATTCCGCGTAACGAAATTATTCGG
TTACATGGGATTAAAACGTCAAGAAATTGAAGAAGCAAAAGCAGGGGACTTAGTAGCCGTTTCTGGTATGGAAGA
CATTAACGTAGGTGAAACAGTATGTCCAGTTGAACATCAAGATGCGTTACCATTATTACGTATTGATGAGCCAAC
ACTACAAATGACGTTCCTTGTAAATAACAGCCCATTTGCAGGTCGTGAAGGTAAATACATTACATCTCGTAAAAT
TGAAGAGCGTCTTCGTTCACAATTAGAAACAGATGTAAGTTTACGTGTAGATAATACAGATTCTCCTGATGCGTG
GATCGTATCTGGACGTGGGGAACTACATTTATCTATCTTAATTGAAAACATGCGTCGTGAAGGTTATGAATTACA
AGTATCTAAGCCAGAAGTAATCATTAAAGAAGTTGATGGCGTAAGATGTGAGCCTGTAGAGCGCGTACAAATCGA
TGTACCTGAAGAATACACTGGTTCTATTAT

SEQ ID NO. 416 Bacillus anthracis

CTATATTTTCATTCTTGATTTTATTTTAATTGCTATTGTATCCCCTTCGCTCTTATAATAGAGAAGGATTAAAAA
GACATTAGGAGTTGGACATGTTGAAAAAACGACAAGATTTACGTAATATAGCAATTATTGCCCACGTTGACCATG
GTAAAACAACACTTGTTGACCAGTTATTACGTCAAGCGGGGACTTTCCGTGCGAACGAACACGTTGAAGAACGCG
CAATGGATTCAAATGATCTAGAAAGAGAACGCGGTATTACAATTTTAGCGAAAAATACTGCGATTCACTATGAAG
ATAAAAGAATTAACATTTTAGATACACCAGGTCACGCTGACTTCGGTGGAGAAGTAGAACGTATTATGAAAATGG
TTGATGGTGTATTACTTGTTGTTGATGCATATGAAGGTTGTATGCCACAAACACGATTTGTTTTAAAGAAAGCTC

TTGAGCAAAACTTAACTCCAATCGTAGTTGTAAATAAAATTGACCGTGACTTCGCTCGTCCTGATGAAGTAGTTG
ATGAAGTAATCGACTTATTCATCGAACTTGGTGCAAACGAAGATCAATTAGAGTTCCCAGTTGTATTTGCATCAG
CAATGAACGGAACAGCAAGCTTAGATTCAAACCCAGCAAATCAAGAAGAGAATATGAAATCATTATTTGATACAA
TTATTGAACATATTCCTGCACCAATTGATAACAGCGAAGAGCCACTTCAATTCCAAGTAGCACTTCTTGATTACA
ACGACTATGTTGGACGTATCGGGGTTGGACGCGTATTCCGCGGTACAATGAAGGTTGGACAACAAGTTGCTTTAA
TGAAAGTAGACGGAAGTGTAAAACAATTCCGCGTAACGAAACTATTTGGTTATATGGGATTAAAACGTCAAGAAA
TTGAAGAAGCAAAAGCTGGAGACTTAGTAGCTGTTTCTGGTATGGAAGACATTAACGTAGGTGAAACAGTATGTC
CAGTTGAACATCAAGATGCGTTACCATTATTACGTATTGATGAGCCAACACTACAAATGACATTCCTTGTAAATA
ACAGCCCATTTGCAGGTCGTGAAGGTAAATACATTACATCTCGTAAAATTGAAGAGCGTCTTCGTTCACAATTAG
AAACAGATGTAAGTTTACGCGTAGATAATACAGAATCTCCTGATGCGTGGATCGTATCTGGACGTGGGGAACTAC
ATTTATCTATCTTAATCGAAAACATGCGTCGTGAAGGTTATGAACTACAAGTATCTAAACCAGAAGTAATCATTA
AAGAAGTTGATGGCGTAAGATGTGAGCCTGTAGAGCGTGTGCAAATTGATGTACCTGAAGAATACACTGGTTCTA
TTATGGAATCTATGGGTGCACGTAAAGGTGAAATGTTAGATATGGTGAATAACGGAAACGGTCAAGTTCGCCTTA
CTTTCATGGTTCCAGCACGTGGTTTAATTGGTTACACAACAGAATTCTTAACATTAACTCGTGGTTACGGTATTT
TAAACCATACATTCGATTGCTACCAACCAGTACACGCTGGACAAGTTGGTGGACGTCGTCAAGGTGTTCTAGTTT
CACTTGAAACAGGAAAAGCATCACAATACGGTATTATGCAAGTTGAAGACCGTGGTGTAATCTTCGTTGAACCAG
GTACAGAAGTATATGCTGGTATGA
TTGTTG

SEQ ID NO. 417 Staphylococcus aureus

TCAATTATATGATATAATAAAAAAGTTGTAATTAAAAGTGGGATTTTACTTAAGAAAGAAGGAAACTATTTATAT
GACTAATAAAAGAGAAGATGTCCGCAATATAGCAATTATTGCTCACGTTGACCATGGTAAAACAACTTTAGTAGA
TGAGTTGTTAAAACAATCTGGTATATTCAGAGAAAATGAACATGTCGATGAACGTGCAATGGACTCTAACGATAT
CGAAAGAGAGCGTGGAATTACGATTCTAGCCAAAAATACGGCTGTTGATTATAAAGGTACACGTATTAATATTTT
GGATACACCAGGACATGCAGACTTTGGTGGAGAAGTAGAACGTATTATGAAAATGGTTGATGGGGTTGTCTTAGT
AGTAGATGCGTATGAAGGTACAATGCCTCAAACACGTTTTGTACTTAAAAAAGCGCTAGAACAAAACCTGAAACC
TGTTGTTGTTGTTAATAAAATTGATAAACCATCAGCACGTCCAGAGGGTGTTGTAGATGAAGTTTTAGATTTATT
TATTGAATTAGAAGCAAACGATGAACAATTAGAATTCCCTGTTGTTTATGCTTCAGCAGTAAATGGAACAGCTAG
CTTAGATCCTGAAAAACAAGATGATAATTTACAATCATTATATGAAACAATTATTGATTATGTACCAGCTCCAAT
TGATAACAGTGATGAGCCATTACAATTCCAAGTAGCATTGTTGGACTACAATGATTATGTTGGACGTATTGGTAT
TGGTCGTGTATTCAGAGGTAAAATGCGTGTCGGAGATAATGTATCACTAATTAAATTAGACGGTACAGTGAAAAA
CTTCCGTGTAACTAAAATCTTTGGTTACTTTGGATTAAAACGTTTAGAAATTGAAGAAGCACAAGCTGGAGATTT
AATTGCTGTTTCAGGTATGGAAGACATTAATGTTGGTGAAACTGTAACACCACATGACCATCAAGAAGCATTGCC
AGTTCTACGTATTGATGAGCCTACTCTTGAAATGACATTTAAAGTTAACAATTCTCCATTTGCTGGCCGTGAAGG
TGACTTTGTAACAGCACGTCAAATTCAAGAACGTTTAAATCAACAATTAGAAACAGATGTATCTTTGAAAGTTTC
TAACACAGATTCTCCAGATACATGGGTAGTTGCTGGTCGCGGTGAATTGCATTTATCAATCCTTATTGAAAATAT
GCGTCGTGAAGGTTATGAATTACAAGTTTCAAAACCACAAGTAATTATTAAAGAAATAGATGGTGTAATG

SEQ ID NO. 418 Staphylococcus epidermidis

ACCCCACCTTTTACTTATCTTTTCAATAATATATGATATAATAAAACAGTTGCAATTAAAAGTGGGAGTATACAC
AAGAAAGGAATTTATAAAATGACTAATTTAAGAGAAGATGTTCGTAATATAGCGATTATTGCGCATGTCGACCAT
GGTAAAACAACATTAGTAGACCAGTTGCTTAAACAATCAGGTATATTTCGTGAAAACGAACATGTCGACGAGCGT
GCAATGGACTCTAATGATTTAGAAAGAGAACGTGGTATTACGATTCTTGCTAAGAATACAGCGATAGATTATAAA
GGAACGCGTATCAATATATTAGACACACCTGGCCACGCCGATTTTGGTGGTGAAGTTGAACGTATCATGAAAATG
GTTGACGGTGTCGTACTAGTGGTTGACGCATATGAAGGTACAATGCCTCAAACTCGTTTTGTTCTTAAAAAAGCT
TTAGAACAAAACTTAAAACCGGTTGTAGTTGTGAATAAAATTGATAAACCAGCTGCTAGACCTGAGGGAGTTGTA
GATGAAGTATTAGACTTATTCATTGAATTGGAAGCGAATGATGAGCAATTAGACTTCCCAGTTGTTTATGCTTCA
GCTGTGAATGGAACAGCAAGTTTAGACTCTGAAAAGCAAGACGAAAATATGCAATCCCTATACGAGACGATTATT
GACTATGTACCGGCACCAGTAGATAATTCAGATGAACCATTACAATTCCAAATTGCTTTACTAGATTATAATGAT
TATGTAGGTCGTATAGGCGTTGGACGTGTGTTCAGAGGTAAAATGCGTGTAGGTGATAATGTATCACTAATTAAA
TTAGATGGTACAGTTAAGAACTTTCGTGTGACGAAAATATTTGGTTACTTTGGTCTTAAACGTGAAGAAATTGAA
GAAGCACAAGCAGGAGACTTAATAGCTGTTTCAGGTATGGAAGATATTAACGTTGGTGAAACAGTTACACCACAT
GATCATCGTGACCCATTACCGGTGTTACGTATTGATGAACCAACCCTAGAAATGACTTTTAAAGTAAATAACTCT
CCGTTTGCTGGACGTGAAGGTGATTATGTAACAGCTCGACAAATTCAAGAAAGATTAGATCAACAACTTGAAACA
GATGTTTCTTTAAAAGTTACACCTACTGATCAACCAGATTCATGGGTTGTTGCTGGTCGTGGTGAACTACACTTG
TCTATTCTTATTGAAAACATGAGACGTGAAGGCTTTGAATTACAGGTTTCTAAACCTCAAGTTATTTTAAGAGAA
ATCGATGGTGTGTTAAGTGAACCATTTGAGCGTGTACAATGTGAA

SEQ ID NO. 419 Bacillus subtilis

GAAAAACGTGACGCTTTTAAAGAGGATGTGTGATATAATATGAAAGTTATCTAATTTTTTTAGGAGATGAAAAAG
TGAAACTTCGAAATGATCTTCGCAACATCGCGATTATTGCCCACGTTGACCATGGGAAAACGACTCTAGTCGATC
AGCTTTTACATCAGGCTGGTACGTTCCGTGCCAACGAACAGGTTGCTGAACGCGCAATGGACTCTAATGATCTTG
AACGCGAACGCGGCATTACAATATTGGCGAAAAATACTGCGATTAACTATAAAGATACACGTATCAATATTTTGG
ACACCCCTGGACATGCAGACTTTGGGGGAGAAGTAGAACGGATTATGAAAATGGTTGACGGCGTAGTGCTTGTCG
TTGACGCATATGAAGGCTGTATGCCTCAAACTCGTTTTGTTCTGAAAAAAGCTCTTGAGCAAAACCTGAACCCTG
TTGTTGTTGTAAACAAAATTGACCGTGACTTTGCTCGTCCAGAGGAAGTTATCGATGAAGTTCTGGATCTGTTCA
TTGAGCTTGATGCCAATGAAGAGCAGCTCGAGTTCCCAGTGGTATATGCTTCCGCGATTAATGGAACAGCGAGTC
TTGATCCGAAACAACAGGATGAAAACATGGAAGCTTTATATGAAACCATTATTAAGCATGTTCCGGCACCTGTTG
ATAATGCAGAGGAGCCGCTTCAATTCCAAGTTGCCCTTCTTGACTACAACGACTATGTAGGCCGTATCGGAATCG
GACGCGTATTCCGCGGCACAATGAAAGTCGGACAGCAGGTTTCTCTTATGAAGCTTGACGGAACGGCAAAGTCAT
TCCGTGTTACAAAGATTTTTGGTTTCCAAGGCTTAAAGCGTGTGGAAATTGAAGAAGCAAAAGCGGGAGACCTCG
TTGCGGTTTCCGGGATGGAAGATATCAACGTTGGTGAAACGGTATGTCCTGTAGACCATCAAGATCCGCTTCCGG
TCCTTCGCATTGATGAGCCGACACTTCAAATGACATTTGTCGTGAATAACAGTCCGTTTGCAGGCCGTGAAGGCA
AATATGTAACGGCCCGCAAAATCGAAGAGCGTCTTCAATCACAGCTTCAGACGGATGTGAGCTTGCGTGTTGAGC
CAACAGCTTCTCCTGATGCTTGGGTTGTTTCAGGACGCGGTGAGCTGCACTTGTCAATTTTAATTGAAAATATGC
GTCGTGAGGGCTATGAGCTTCAAGTGTCAAAACCTGAAGTTATTATCAAAGAAATCGACGGCGTACGCTGTGAGC
CTGTTGAACGTGTGCAAATTGATGTTCCTGAAGAGCATACTGGCT

SEQ ID NO. 420 Streptococcus mutans

GGAATGGAAAAGTAAAAGAGAAGAATTAGTTCTTTTTTGAGATAATGACAGGGATTAGTATGAGCTGTTGTCTTT
TGTTTTTGCAATACTGGTTGATTGAGGACTTATTTTATAAAATTTGGAGATACCAAGACTGCGACTTTGCTATCT
TGGTTTTTCTTTTATATTTTAAAACATTTACATATCTCTCCTGAGTTTTTCCCTAATTTTTATGGTATAATAGAT
AAGTTGAAATAAATTAATGTAAAATGTAAGAGGAATTATGACAAATTTTAGAGAAGATATTAGAAATGTTGCTAT
CATTGCCCACGTTGACCATGGGAAAACAACCCTTGTTGATGAGCTCTTAAAACAATCGCATACACTTGATGAGCA
TAAAAAATTAGAAGAACGTGCGATGGACTCTAATGATCTTGAAAAAGAGCGTGGGATTACTATTCTTGCAAAAAA
TACTGCTGTTGCCTACAATGGTGTACGTATTAACATTATGGACACACCAGGACATGCGGATTTTGGTGGAGAAGT
AGAGCGTATCATGAAAATGGTTGATGGGGTTGTTCTTGTTGTTGATGCTTATGAAGGTACCATGCCGCAAACACG
TTTTGTTTTGAAAAAAGCTTTGGAACAAAACCTGGTTCCAATCGTGGTGGTGAATAAGATTGACAAGCCATCAGC
TCGTCCGGCAGAAGTTGTTGATGAAGTTCTTGAACTTTTCATTGAACTTGGAGCAGATGATGACCAGTTAGAGTT
TCCAGTCGTTTACGCTTCGGCGATTAATGGAACTTCTTCATTATCAGATGAACCAGCGGATCAAGAACATACAAT
GGCACCCGTTTTTGATACTATTATTGAGCATATTCCAGCACCGATCGATAATTCAGATCAGCCACTTCAATTTCA
AGTGTCTCTCCTTGATTATAACGACTTTGTTGGACGTATCGGTATTGGGCGAGTCTTCCGTGGTTCTGTTAAAGT
CGGGGATCAAGTGACACTTTCTAAACTTGATGGTACAACAAAGAATTTTCGTGTTACAAAACTTTTCGGTTTCTT
CGGTTTGGAACGTCGTGAGATTAAGGAAGCTAAGGCTGGCGATTTGATTGCTGTTTCAGGTATGGAAGATATCTT
TGTTGGTGAAACGATTACACCAACTGATGCTGTAGAACCACTTCCTATTCTTCACATTGATGAGCCAACTCTGCA
AATGACCTTTTTAGCTAACAATTCCCCTTTTGCAGGCCGTGAAGGTAAATTTGTAACCTCGCGTAAGGTAGAAGA
GCGTTTGTTGGCAGAATTGCAAACAGATGTTTCCCTTCGTGTAGAAGCCACTGACTCACCAGATAAATGGACGGT
TTCAGGTCGTGGGGAGTTACATCTGTCAATCCTTATTGAAACCATGCGCCGTGAAGGATATGAGCTGCAAGTATC
GCGTCCAGAAGTTATTATCAAAGAAATTGATGGCATCAAATGTGAGCCATTTGAACGCGTGCAAATTGACACACC
GGAAGAATACCAAGGTGCTGTTATCCAGTCCCTTTCAGAACGTAAAGGTGAAATGCTTGA

SEQ ID NO. 421 Streptococcus pneumoniae

AAGCGGAGTGAAAACATTTACACTTGCTTGAGTTATGTTATTTATTTGAAATTATGGTATAATCGTTCAGTTAGA
AAATAAATTTTGAATATTATAGAGGAAATCATGACAAAATTAAGAGAAGATATCCGTAACATTGCGATTATCGCC
CACGTTGACCACGGTAAAACAACCCTGGTTGACGAATTATTGAAACAATCAGAAACGCTTGATGCACGTACTGAA
TTGGCAGAGCGTGCTATGGACTCAAACGATATCGAAAAAGAGCGTGGAATCACCATCCTTGCTAAAAATACTGCC
GTTGCTTACAACGGAACTCGTATCAACATTATGGACACACCAGGACACGCGGACTTCGGTGGAGAAGTTGAGCGT
ATCATGAAAATGGTTGACGGTGTTGTCTTGGTCGTAGATGCCTATGAAGGAACCATGCCACAAACTCGTTTCGTA
TTGAAAAAAGCCTTGGAACAAGACCTTGTCCCAATCGTGGTTGTTAACAAAATCGATAAGCCATCAGCTCGTCCA
GCAGAAGTAGTGGATGAAGTCTTGGAACTTTTCATCGAGCTTGGTGCAGATGACGACCAGCTTGATTTCCCAGTG
GTTTATGCTTCAGCGATCAACGGAACTTCTTCATTGTCAGATGATCCAGCTGACCAAGAAGCGACTATGGCACCA
ATCTTTGACACGATTATCGACCATATCCCAGCTCCAGTAGATAACTCAGATGAGCCTTTGCAGTTCCAAGTGTCA
CTTTTGGACTACAATGACTTCGTTGGACGTATCGGTATCGGTCGTGTCTTCCGTGGTACAGTTAAGGTTGGGGAC
CAAGTTACCCTTTCTAAACTTGACGGTACAACTAAAAACTTCCGTGTTACAAAACTCTTCGGTTTCTTTGGTTTG
GAACGTCGTGAAATCCAAGAAGCCAAAGCGGGTGACTTGATTGCCGTTTCAGGTATGGAAGACATCTTTGTCGGT
GAAACCATCACTCCGACAGATGCAGTAGAAGCTCTTCCAATCCTACACATCGATGAGCCAACTCTTCAAATGACT
TTCTTGGTCAACAACTCACCATTTGCTGGTAAAGAAGGTAAATGGGTAACTTCTCGTAAGGTGGAAGAACGCTTG

CAGGCAGAATTGCAAACAGACGTTTCCCTTCGTGTTGACCCAACTGATTCACCAGATAAATGGACTGTTTCAGGA
CGTGGAGAATTGCACTTGTCAATCCTTATCGAAACAATGCGTCGTGAGGGCTATGAACT

SEQ ID NO. 422 Streptococcus agalactiae

AGAAATGAATTAAATTGAAAAAAGTAGAAAATAAATGGCATAAATAATGAAATGATGAAAAGTTTTCTTATCACA
AATAGGCAGTTAATATGAAAACATTTACACTTGTGTAAATTCTGTTTTTTAAGAAAAATTGTGTTATAATTCATA
AGTTAACAGAATTACATTATAAAATAGAGGAAAACATGACAAATTTAAGAACAGATATCCGTAACGTTGCGATCA
TTGCCCACGTTGACCACGGTAAAACAACTCTCGTTGATGAATTATTAAAACAATCACATACTCTTGATGAGCGTA
AAGAGCTTGAAGAACGTGCAATGGATTCAAATGATATCGAAAAAGAACGTGGTATCACCATTCTTGCAAAAAATA
CAGCCGTAGCATACAACGATGTTCGTATCAATATTATGGACACACCTGGTCACGCGGACTTTGGTGGTGAAGTTG
AGCGTATTATGAAAATGGTTGATGGTGTTGTTTTAGTCGTTGATGCCTACGAAGGAACAATGCCACAAACACGTT
TTGTTTTGAAGAAAGCTCTTGAACAAAACTTAATTCCAATCGTTGTTGTAAATAAAATTGATAAGCCGTCAGCTC
GTCCATCAGAGGTTGTTGATGAAGTTCTTGAACTATTTATTGAGCTCGGTGCTGATGATGATCAACTAGATTTCC
CTGTTGTTTATGCTTCAGCTATCAATGGAACATCTTCAATGTCAGATGATCCTTCAGATCAAGAAAAAACAATGG
CACCGATTTTTGATACTATCATTGATCACATTCCAGCCCCAGTTGACAACTCGGAAGAACCACTTCAATTCCAAG
TTTCTCTTCTTGATTACAATGATTTTGTAGGACGTATTGGTATTGGACGTGTTTTCCGCGGGACTGTCAAAGTTG
GAGATCAAGTTACTCTTTCAAAACTTGATGGTACAACTAAAAACTTCCGCGTAACAAAACTTTTTGGTTTCTTTG
GACTTGAACGTAAAGAAATCCAAGAGGCTAAAGCGGGTGATTTAATCGCTGTTTCTGGTATGGAAGATATCTTCG
TTGGTGAGACAGTAACTCCGACAGATGCTATTGAACCACTACCAGTTTTACGTATTGACGAGCCAACACTTCAAA
TGACTTTCTTGGTGAATAATTCACCATTTGCAGGTCGCGAAGGTAAATGGATTACGTCACGTAAGGTTGAAGAAC
GTCTTTTAGCAGAATTACAAACAGACGTTTCTTTACGTGTTGACCCAACAGATTCGCCAGATAAATGGACGGTTT
CAGGGCGTGGAGAATTACATTTATCTATCCTTATTGAAACAATGCGTCGTGAGGGATATGAACTTCAAGTATCAC
GTCCAGAAGTTATCATCAAAGAAATTGATGGTGTTCAATGCGAGCCGTTTGAGCGTGTTCAAATTGATACTCCAG
AAGAATATCAGGGTGCTATTATCCAAAGTTTGTCAGAGCGTAAAGGTGATATGCTTGATATGCAGATGGTTGGTA
ATGGTCAAACGCGTTTGATTTTCTTGATTCCTGCACGTGGTTTGATTGGTTATTCAACAGAGTTTCTTTCAATGA
CACGTGGATATGGTATCATGAATCATACTTTTGACCAGTATCTACCGGTTGTTCAAGGAGAAATTGGTGGTCGTC
ATCGTGGTGCCTTGGTTTCTATTGAAAATGGTAAAGCAACTACATATTCAATTATGCGTATTGAAGAACGTGGGA
CTATCTTTGTAAATCCAGGTATAGAAGTTTATGAAGGAATGATTGTTGGTGAGAATTCTCGTGATAATGACCTCG
GAGTCAATATTACAACTGCTAAACAAATGACAAATGTCCGTTCAGCAACTAAAGATCAAA

SEQ ID NO. 423 Streptococcus pyogenes

GTCTTAAAAGACGGTATTGATTATTGGGATGGCAAAGTTAAACAAACAACCTAGTTAAGAGTAACGTGGAGTTAA
GGGGAATAAAGGCAGTCACTGTCTCAAAAACCTTAATTCCTTTTTTTGCTGTATCCAGACTTGCTGAAAGTCTGA
AAATATTTACAATTGATTAAAACCAGTTTTTTAAAACATTTTGTGTTATACTTATCTAGTTAAAATATATTTACT
TAGAGGAACAAATGACTAACTTAAGAAACGATATCCGTAACGTAGCGATTATTGCCCACGTTGACCACGGAAAAA
CAACACTTGTAGATGAATTATTAAAACAATCCCATACTCTTGATGAGCGTAAAGAGCTTCAAGAGCGTGCCATGG
ATTCCAATGACCTTGAAAAAGAACGTGGGATTACAATCCTTGCGAAAAATACGGCAGTAGCCTATAACGATGTTC
GTATTAACATCATGGATACCCCAGGACACGCGGACTTCGGTGGTGAAGTTGAACGTATCATGAAAATGGTTGACG
GGGTTGTTCTTGTTGTGGATGCCTACGAAGGAACAATGCCCCAGACGCGTTTCGTATTGAAAAAAGCACTTGAGC
AAAACCTTATCCCGATCGTTGTGGTGAACAAGATTGACAAACCTTCAGCTCGTCCAGCAGAAGTTGTAGATGAAG

TGCTTGAATTATTCATCGAACTTGGTGCCGATGATGAGCAATTGGAATTCCCAGTTGTTTACGCATCAGCTATTA
ATGGAACATCATCATTATCAGATGACCCTGCTGACCAAGAGCATACTATGGCACCGATCTTTGATACGATTATTG
ATCATATTCCAGCGCCAGTTGATAATTCAGATGAGCCTTTGCAATTCCAAGTGTCACTTTTGGACTACAACGATT
TCGTAGGTCGTATCGGTATCGGTCGTGTTTTCCGTGGTACTGTTAAAGTGGGTGACCAAGTAACTCTTTCAAAAC
TTGATGGTACCACTAAAAACTTCCGTGTTACAAAACTGTTTGGTTTCTTCGGTTTGGAACGTCGTGAAATTCAAG
AAGCTAAAGCAGGTGACTTGATTGCTGTTTCAGGTATGGAAGATATCTTTGTTGGAGAAACCATTACACCAACTG
ACTGTGTGGAAGCTCTGCCAATTCTTCGTATTGATGAGCCAACACTTCAGATGACTTTCTTGGTCAATAACTCTC
CTTTTGCAGGTCGTGAAGGTAAATGGATCACGTCACGTAAGGTTGAAGAACGTCTTTTAGCAGAATTGCAAACAG
ACGTGTCACTTCGTGTTGACCCAACAGATTCGCCAGATAAATGGACGGTTTCAGGGCGTGGAGAATTGCATTTAT
CTATCCTCATTGAAACCATGCGCCGTGAAGGCTATGAACTTCAAGTATCACGTCCAGAAGTTATCATCAAAGAAA
TTGATGGTGTCAAATGTGAACCGTTTGAGCGTGTTCAAATTGATACACCAGAAGAATATCAGGGTGCAATCATCC

SEQ ID NO. 424 Enterococcus faecalis

CATCACGCAACGGAAATCGGACAAGCAAGCATGGGCGTGCGTATTAGCGGTTGTGCAGGTTTGGAAATTATTGCT
ATGTTAAAAGGCAACCATCATGGCTATTTATCTAATCTAAGTCCTTGGGATTATGCAGCAGGCTTAGTACTTTTG
GAAGAATTTGGGTTTAAATACTCTGGTATTACAGGAAAACCATTAACTTTTGCGGGTCGTGAATACTTTATTGCA
GCAACTCCTGAAACCTATGATGAAGTATTTACCCGATATTTAAATGAATCGGAATAATCAAAGAAGAGCGTTGCT
GAAAGGTAAGGCTCTTCCTCTTTTAAAAGAGAAAAATTTGTAAAAAAATGTCCTTGTTTTCAGAAAAAGCCGAAT
AATTTCTAAAACTTTCATTATTTTTGCAGGCGAAAGCCTTTTTTTAATGAAAAAAGTTTGCTATAATAAGCAGTC
GGCTTTTATGGACTTAAGTAACATAAGCGTATATAGATAAGGAGCAATTAAATTGAAATACAGAGATGATATTCG
TAACGTGGCAATTATCGCCCACGTTGACCATGGTAAAACAACCTTAGTAGATGAACTTTTAAAACAATCTGACAC
TTTAGATGGACACACACAATTACAAGAACGTGCAATGGATTCCAATGCACTTGAAAGTGAACGTGGAATTACTAT
CTTAGCAAAAAATACAGCCGTAGATTATAACGGTACACGTATCAACATTCTAGATACACCAGGACACGCGGACTT
CGGTGGTGAAGTAGAACGTATCATGAAAATGGTAGACGGTGTTGTTTTAGTTGTCGATGCGTATGAAGGAACAAT
GCCTCAAACACGTTTCGTATTGAAAAAAGCATTAGAACAAAAAGTAACACCAATCGTGGTTGTTAACAAAATTGA
CAAACCTTCTGCTCGTCCTGAACACGTAGTAGATGAAGTTTTAGAGTTATTCATCGAATTAGGTGCAGACGACGA
TCAATTAGATTTCCCAGTTGTTTATGCTTCTGCTTTAAACGGAACTTCAAGTGAATCAGATGATCCAGCAGATCA
AGAGCCAACAATGGCCCCAATTTTTGATAAAATTATTGAACATGTGCCAGCTCCAGTTGACAATTCAGACGAACC
ACTTCAATTCCAAGTCTCATTACTAGACTACAACGATTACGTTGGACGTATTGGGATTGGCCGTGTGTTCCGTGG
CACAATGAAAGTCGGCGACCAAGTTGCGTTGATGAAATTAGATGGCAGCGTGAAAAATTTCCGTGTAACGAAAAT
TTTAGGTTTCTTTGGCTTACAACGTGTGGAAATTGATGAAGCAAAAGCGGGCGATTTAATTGCCGTTTCTGGAAT
GGAAGACATTTTCGTTGGGGAAACAGTTGTAGATGTTCACAATCAAGAAGCATTACCAATTCTACACATTGATGA
GCCAACCTTACAAATGACTTTCTTAGTTAACAATTCTCCATTTGCGGGACGTGAAGGAAAATACATCACCGCTCG
TAAAATCGAAGAACGTTTAATGGCTGAGTTACAAACAGACGTATCTTTACGTGTTGATCCAATTGGCCCAGATTC
TTGGACTGTATCAGGTCGTGGCGAATTGCATTTATCAATTTTAATTGAAAACATGCGTCGTGAAGGCTATGAATT
ACAAGTTTCTCGTCCAGAAGTTATTGAACGTGAAATTGATGGAGTTAAATGTGAACCATTTGAACGTGTTCAAAT
TGACACACCTGAAGA

SEQ ID NO. 425 Lactococcus lactis

CGAAAAAGCAAGTTAAATATGTTGTAAATAATGGTGTTACATTAGATAATACTAGTGGTGGGCCTAATTTGGCTG
CACCTGTGACGGTGGATAGTCAGGTAATTTCGAACGATAAAGGTACGATTATGGGTGTAAGGACCTATACAGCAG
ATTTAAGCCAAGCAGAAGTAGTTAAAAAAGTGGGTAATTTGAATGCAATGTCCTTTGGAGAATTTTGGGGTACAA
AAGTTTTTGCTGCCAGCCAAAATCAGACAAATTCAGATAAGACTTATTCTGTTACGTTTAAACTGAATATAAATT
GGATAGTATCTAATGGCTATGCTTCGCTAACAAAAGTAACAGGTGGCTATGGTTCTTGCATTGACCATGTTTATG
TTGCTAATTCTAGTGTTACTACTGCAACGAATGGTCAGATTAAAGGTTCAAGTGGTTATACTCAACAAGTTGATG
ACAAATCAGAAGGGAATAGTTTATCGTGGTCAATTACGCGAAACTATAAACCTGTAAAAGTTCCAGCAAGTGGGG
CAAATGTAGGAGCTACGTATTTTGCCACACTTAAACGGGGAAATAGTACATGGAAATTCCAAACAACAAATAGAG
CTTATTAAGTGGGAGGAAGTGGAATGAATATAAAAGGCATAAAAATTTGGCAAGTATTTCTTGCATTCATCATTT
GGATAGGAACCATGTTTCTTCCTGCAACGGTAAATCAGGCTAAATTGAATACGAATTTTGACTATAAAAAAAGTC
GAGAAAATTTCTTTTATTTTCTTTTTCATCAAGTCCCTTTTTATAGTTTCATTTTGGGATTGGTGTTGCTTATAT
CACTTTTTCTCATTTATAGGAAAATAAATTTTAGTGTCTATTTTTCTTTTGCTAGTCTTATTTTTTACATTAGTT
TCTTAGTTATAGCTTTTCCGTCTATGATTATTTTTAATCATAGTTTATCTGGGAATACTTTTGGGGCTGAACTTT
CTATCTTTCTAACCTTTTATGGAGCTGGATATATTATTGCTGTTCTATTTGGTTTAGTTGCTTTTCTTTTACTCT
TTCTCTACAGTTTAAGAATAAAAGAATGTTAACAACATAATCATTTTTACTGATTTTATTAATTATAAAAAAATA
AAGAACTCCTTAGAAATTTTTCTTTGGGGTTTTCATTTTGGAAGTAAAAAAATCTTTGTTAGGCTTGTAAACGTG
TGCATTTACAGCTTTTAGAAAAGTGTGCTATAATGGGTTAGATATATACGAAAGTAAGGTATGATAAAATTGACT
AAATTACGCGAAGATATTAGAAACGTCGCTGTTATTGCCCACGTTGACCATGGTAAAACTACATTGGTTGACGAA
CTCTTAAAACAATCTCAAACGTTGGATGCTCGTAAAGAATTAGCTGAACGTGCGATGGACTCAAATGCACTTGAG
CAAGAACGTGGGATTACTATCCTTGCCAAAAATACAGCAGTTGAATATAACGGAACTCGTATCAACATCTTGGAC
ACACCAGGTCACGCGGACTTCGGTGGAGAAGTTGAACGTATTATGAAAATGGTTGATGGGGTTGTCCTCGTTGTC
GATGCTTATGAAGGAACAATGCCTCAAACACGTTTTGTTTTGAAA

Figure 18 represents sequences amplified with molecular marker VI (pgi) from various Gram-negative bacteria (SEQ ID NOs 426-430).

SEQ ID NO. 426 Citrobacter freundii

ATCTGGTACAACAATTTCTTCGGTGCTGAAACCGAAGCGATTCTGCCGTACGACCAGTATATGCACCGTTTCGCG
GCCTACTTCCAGCAGGGCAATATGGAATCCAATGGTAAATACGTTGACCGTAACGGCAATGCGGTGGATTACCAG
ACAGGCCCAATCATCTGGGGTGAGCCGGGTACTAACGGTCAGCATGCGTTCTACCAACTGATTCATCAGGGTACC
AAAATGGTTCCGTGCGATTTCATCGCTCCGGCAATCACCCACAACCCGCTGTCGGATCACCATCCGAAACTGCTG
TCTAACTTCTTCGCTCAGACCGAAGCGCTGGCTTTTGGTAAATCCCGCGAAGTGGTTGAGCAGGAATACCGCGAC
CAGGGTAAAGATCCGGCAACGCTTGACCACGTTGTGCCGTTCAAAGTGTTCGAAGGTAACCGTCCAACTAACTCC
ATCCTGCTGCGCGAAATCACACCGTTCAGCCTGGGTGCGCTGATTGCGCTGTACGAGCACAAAATCTTCACTCAG
GGCGCGATCCTGAATATCTTCACCTTTGACCAGTGGGGCGTTGAGCTGGGCAAACAGCTGGCGAATCGCATTCTG
CCAGAGCTGAATGATGATAAAGAAATCACCAGCCATGATTGCTCAACTAACGGTTTGATTAACCGCTATA

SEQ ID NO. 427 Klebsiella pneumoniae

ATCTGGTACAACAACTTCTTCGGTGCGGAAACCGAAGCGATTCTGCCGTACGACCAGTACATGCACCGCTTTGCC
GCTTACTTCCAGCAGGGCAACATGGAGTCCAACGGTAAGTATGTTGACCGTAACGGCCACGCGGTAGACTACCAG
ACTGGCCCAATCATCTGGGGTGAGCCGGGCACCAACGGTCAGCACGCGTTCTACCAGCTGATCCACCAGGGCACC
AAAATGGTACCGTGCGATTTCATCGCTCCGGCTATCACCCACAACCCGCTGTCTGACCACCATCAGAAACTGCTG
TCTAACTTCTTCGCCCAGACCGAGGCCCTGGCCTTTGGTAAATCCCGCGAAGTGGTTGAGCAGGAATATCGCGAT
CAGGGTAAAGACCCGGCGACCCTGGAGCACGTGGTGCCGTTCAAAGTGTTCGAAGGTAACCGCCCGACTAACTCC
ATCCTGCTGCGCGAGATTACCCCGTTCAGCCTCGGGGCGCTGATTGCCCTGTACGAGCACAAAATCTTCACCCAG
GGCGCGATCCTCAACATCTTCACCTTTGACCAGTGGGGCGTTGAGCTGGGCAAACAGCTGGCTAACCGCATCCTG
CCGGAGCTGAAAGACGGCAGCGAAGTTAGCAGCCACGACAGCTCTACTAACGGCCTGATTAACCGCTATA

SEQ ID NO. 428 Klebsiella oxytoca

ATCTGGTACAACAACTTCTTCGGCGCTGAAACCGAAGCGATTCTGCCGTACGACCAGTATATGCACCGCTTTGCC
GCCTACTTCCAGCAGGGCAACATGGAATCCAACGGTAAATACGTTGACCGTAACGGCAACGCCGTGGATTACCAG
ACGGGCCCGATCATCTGGGGCGAGCCGGGCACCAACGGTCAGCACGCGTTCTATCAGCTGATTCACCAGGGGACC
AAAATGGTGCCGTGCGATTTTATCGCTCCGGCGATTACGCATAACCCGCTGTCTGACCATCATCCGAAGCTGCTG
TCTAACTTCTTTGCGCAGACCGAAGCGCTGGCGTTTGGTAAATCCCGCGAAGTGGTTGAACAGGAATATCGCGAT
CAGGGTAAAGATCCCGCGACGCTGGAACACGTGGTGCCGTTCAAAGTGTTTGAAGGCAACCGCCCGACTAACTCC
ATCCTGCTGCGTGAAATCACGCCGTTCAGTCTGGGCGCGCTGATTGCCCTGTATGAACATAAGATTTTCACCCAG
GGCGTGATTATGAACATCTTCACCTTCGACCAGTGGGGCGTTGAGCTGGGCAAACAGCTGGCGAACCGCATCCTG
CCGGAGCTGAAGGATGGTTCTGAAGTCAGCAGCCACGACAGCTCCACTAACGGCCTGATTAACCGCTATA

SEQ ID NO. 429 Escherichia coli

ATCTGGTACAACAACTTCTTCGGGGCTGAAACCGAAGCGATTCTGCCATACGACCAGTACATGCACCGTTTTGCG
GCCTACTTCCAGCAGGGCAACATGGAATCCAACGGTAAATACGTTGACCGTAACGGTAACGCTGTGGATTACCAG
ACTGGCCCAATCATCTGGGGCGAGCCAGGCACTAACGGCCAGCATGCGTTCTATCAGCTGATCCACCAGGGCACC
AAAATGGTTCCGTGCGATTTCATCGCCCCGGCCATTACCCATAACCCGCTGTCAGACCACCATCCGAAGCTGCTG
TCTAACTTCTTCGCACAGACTGAAGCGCTGGCGTTCGGTAAGTCTCGTGACGTGGTTGAGCAGGAATACCGCGAC
CAGGGTAAAGATCCGGCCACGCTGGACCACGTTGTGCCGTTCAAAGTGTTCGAAGGCAACCGTCCAACCAACTCC
ATCCTGCTGCGCGAAATTACGCCGTTCAGCCTGGGTGCGCTGATTGCCCTGTACGAGCATAAGATCTTCACTCAG
GGCGCTATCCTGAACATCTTCACCTTTGACCAGTGGGGCGTTGAGCTGGGTAAACAGCTGGCAAACCGTATCCTG
CCTGAACTGGGTGACGATAACGCGATTAACAGCCACGACAGCTCCACAAATGGTCTGATTAACCGCTATA

SEQ ID NO. 430 Serratia marcescens

AAGCACTTTGCCGAAACGCCGGCGGAGAAAAACCTGCCGGTGTTGCTGGCGCTGATCGGTATTTGGTACAACAAC
TTCTTTGGCGCCGAAACCGAAGCCATTCTGCCGTACGATCAGTACATGCACCGTTTTGCCGCTTACTTCCAGCAG
GGCAAGATGGAATCCAACGGCAAGTACGTCGATCGCAACGGCAACCCGGTGGATTACCAGACCGGTCCCGTCATT
TGGGGCGAGCCGGGCACCAACGGCCAGCATGCGTTCTATCAGTTGATCCACCAGGGCACCAAGCTGGTGCCGTGC
GATTTCATCGCGCCGGCCATCAGCCATAACCCGCTGGGCGATCATCACGCCAAACTGCTGTCCAACTTCTTCGCT
CAGACCGAAGCGCTGGCGTTCGGCAAGTCGCTGGAAGTGGTGGAAGCCGAGTTCGCGGCGCAGGGCAAAACTCCT
GAGCAGGTCAAGCACGTGGCGCCGTTCAAGGTGTTTGAAGGCAACCGGCCG

Figure 19 represents sequences amplified with molecular marker V (carB) from various Gram-negative bacteria (SEQ ID NOs 431-442).

SEQ ID NO. 431 Neisseria gonorrhoeae

TTCGCCCTTCGACCTTATGACTGACCCTGAAATGGCGGATGTTACCTACATCGAACCGATTATGTGGCAGACGGT
GGAGAAGATTATCGCCAAGGAGCGGCCCGATGCGATTCTGCCCACGATGGGCGGTCAGACCGCGCTGAACTGTGC
GCTGGATTTGGCGCGTAACGGCGTGCTGGCGAAATACAATGTCGAGTTAATCGGCGCAACGGAAGACGCGATCGA
CAAGGCGGAAGACCGCGGCCGCTTTAAAGAAGCGATGGAAAAAATCGGCCTCTCTTGCCCGAAATCTTTTGTCTG
CCACACCATGAACGAAGCCTTGGCGGCGCAAGAACAGGTCGGCTTTCCGACGCTGATTCGTCCGTCTTTCACGAT
GGGCGGTTCGGGCGGCGGCATTGCCTACAATAAGGATGAGTTTTTGGCGATTTGCGAACGCGGTTTCGATGCGTC
GCCTACGCATGAGCTGCTGATTGAGCAGTCTGTGCTCGGCTGGAAAGAGTACGAGATGGAAGTGGTGCGCGATAA
GGCGGACAACTGCATCATCATCTGTTCGATTGAAAACTTCGACCCGATGGGCGTTCATACGGGCGACTCGATTAC
GGTTGCGCCGGCGCAAACGCTGACGGACAAGGAATACCAAATCATGCGCAACGCTTCGTTGGCGGTATTGCGCGA
AATCGGCGTGGACACGGGCGGCTCGAACGTGCAGTTTGCGGTGAACCCTGAAAACGGCGAGATGATTGTGATCGA
GATGAACCCGCGCGTGAGCCGTTCGTCCGCGCTGGCTTCCAAAGCAACGGGCTTCCCGATTGCGAAGGTGGCGGC
GAAGCTGGCGGTCGGCTTTACGCTGGACGAGTTGCGCAACGACATCACCGGCGGCCGCACGCCCGCGTCGTTCGA
GCCTTCCATCGACTATGTGGTAACCAAAATCCCGCGTTTCGCGTTTGAAAAATTCCCCGCCGCAGACGACCGCCT
GACCACGCAGATGAAATCAGTAGGCGAAGTAAGGGCGAATTCCAGCACACTGGCGGCCGTTACTAGTGGATCCGA
GCTCGGTACCAAGCTTGATGCATAGCTTGAGTATTCTAACGCGTCACCTAAAT

SEQ ID NO. 432 Serratia marcescens

TTTNGNATTCGCCCTTCGACGATTATGACTGACCCGGCAAATGGCGGATGCAACCTACATCGAGCCAATTCACTG
GGAAGTGGTACGTAAAATCATCGAGAAAGAGCGTCCGGATGCGGTTCTGCCGACCATGGGTGGCCAGACTGCGCT
GAACTGTGCGCTGGAGCTGGAGCGTCAGGGCGTGCTGGAAGAGTTCGGCGTGACCATGATTGGTGCGACCGCCGA
CGCGATTGATAAAGCAGAAGACCGTCGTCGCTTCGACGTGGCGATGAAAAAAATCGGCCTCGACACCCGCGCGTT
CCGGTATCGCTCACAACATGGAAGAGGCGCTGGCCGTTGCGGCTGAAGTGGGTTATCCGTGCATCATCCGTCCTT
CCTTCACCATGGGCGGCACCGGCGGCGGTATCGCCTACAACCGCGAAGAGTTTGAAGAGATTTGCGAGCGCGGCC
TGGATCTCTCCCCAACCAAAGAGCTGCTGATTGATGAATCGCTGATTGGCTGGAAAGAGTACGAGATGGAAGTGG
TGCGTGATAAAAACGACAACTGCATCATCGTCTGCTCCATCGAAAACTTCGATGCGATGGGTATCCACACCGGCG
ACTCCATTACCGTTGCGCCAGCGCAAACGCTGACCGACAAAGAGTACCAAATCATGCGTAACGCATCGATGGCGG
TACTGCGTGAAATCGGCGTCGAAACCGGTGGTTCTAACGTGCAGTTCTCGGTGAACCCGAAAACCGGCCGTCTGA
TTGTTATCGAAATGAACCCGCGCGTGTCCCGCTCCTCCGCGCTGGCTTCTAAAGCGACCGGCTTCCCGATTGCGA
AGGTGGCGGCGAAACTGGCGGTCGGTTACACCCTTGACGAGCTGATGAACGATATCACCGGGGGCCGCACGCCTG
CGTCCTTCGAACCGTCTATCGACTACGTTGTGACCAAAATTCCACGCTTCAACTTCGAGAAATTCGCTGGCGCGA
ACGACCGTCTGACCACCCNGTTGAAATCCTGTAAAAAGAAGTAAGGGGTNACTCNAAAAAA

SEQ ID NO. 433 Citrobacter freundii

TCGCCCTTCGACTATTATGACTGACCCGGAAATGGCCGATGCCACCTACATCGAGCCGATTCACTGGGAAGTGGT
ACGCAAAATCATTGAGAAAGAGCGCCCGGATGCGGTGCTGCCAACCATGGGCGGTCAGACGGCGCTGAACTGTGC

GCTGGAGCTGGAACGCCAGGGCGTACTGGCTGAATTCGGCGTGACCATGATTGGCGCAACGGCGGATGCCATTGA
TAAAGCGGAAGACCGTCGTCGCTTTGATATCGCGATGAAGAAAATTGGTCTCGACACCGCGCGCTCTGGCATCGC
TCACACCATGGAAGAAGCGCTGGCGGTTGCTGCTGACGTGGGCTTCCCGTGCATCATCCGACCGAGCTTCACCAT
GGGCGGCACCGGCGGCGGTATCGCTTATAACCGTGAAGAGTTCGAAGAGATTTGCGAACGCGGTCTGGACCTTTC
CCCAACCAACGAGCTGCTGATTGATGAATCGCTGATTGGCTGGAAAGAGTACGAGATGGAAGTGGTGCGTGATAA
AAACGACAACTGCATCATCGTCTGCTCCATCGAAAACTTCGACGCGATGGGCATCCATACCGGTGACTCCATCAC
CGTAGCACCTGCCCAGACGCTGACCGACAAAGAATATCAAATCATGCGTAACGCCTCGATGGCGGTACTGCGTGA
AATCGGCGTGGAAACCGGCGGTTCTAACGTCCAGTTTGCGGTAAACCCGAAAAACGGTCGCCTGATTGTCATCGA
GATGAACCCGCGCGTATCCCGCTCCTCGGCGCTGGCGTCCAAAGCTACCGGCTTCCCGATTGCGAAAGTCGCCGC
CAAGCTGGCCGTAGGTTACACCCTCGACGAACTGATGAACGACACCACCGGCGGCCGTACTCCGGCCTCGTTTGA
GCCGTCCATCGACTACGTTGTGACGAAAATTCCACGCTTCAACTTCGAGAAATTCGTTGGTGCTAATGACCGTCT
GACCACGCAGATGAAATCAGTAGGAGAAGTAAGGGCGAATTCCAGCACACTGGCGGCCGTTACTAGTGGATCCGA
GCTCGGTACCAAGCTTGATGCATAGCTTGAGTATTCTAACGCGTCACCTAAATAGCTGGCG

SEQ ID NO. 434 Enterobacter aerogenes

TTNCGNATTCGCCCTTCGACGATTATGACTGATCCGGAAATGGCCGATGCGACCTACATCGAGCCGATTCACTGG
GAAGTAGTACGCAAGATTATTGAAAAAGAGCGCCCGGACGCGGTGCTGCCAACGATGGGCGGTCAGACGGCGCTG
AACTGCGCGCTGGAGCTGGAGCGTCAGGGCGTGTTGGAAGAGTTCGGCGTGACTATGATTGGTGCGACCGCCGAT
GCGATTGATAAAGCAGAAGACCGCCGTCGTTTCGACGTAGCGATGAAGAAAATTGGTCTGGAAACCGCGCGTTCC
GGTATCGCACACACGATGGAAGAAGCGCTGGCGGTTGCCGNTGACTGGGCTTCCCGTGCATTATTNGNCCCATCC
TTTACCATGGGCGGTAGCGGCGGCGGTATCGCTTATAACCGCGAAGAGTTGAAGAAATTTGCGCCCGCGGTCAGG
ATCTCTCCCCAACCAAAGAGCTGCTGATTGATGAGTCGCTGATCGGCTGGAAAGAGTACGAGATGGAAGTGGTGC
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CCATCACTGTCGCGCCAGCCCAAACGCTGACCGACAAAGAATATCAAATCATGCGTAACGCCTCGATGGCGGTGC
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TTATCGAAATGAACCCACGCGTGTCCCGTTCTTCGGCGCTGGCGTCGAAAGCGACCGGTTTCCCGATTGCTAAAG
TGGCGGCGAAACTGGCGGTGGGTTACATCCTCGACGAACTGATGAACGACATCACTGGCGGACGTACTCCGGCCT
CCTTCGAGCCGTCCATCGACTATGTGGTTACTAAAATTCCTCGCTTCAACTTCGAAAAATTCGCTGGTGCTAACG
ACCGTCTGACCACTCAGATGAAATCCGTAGGTGAAGTAAGGGCGAATTCCAGCACACTGGCGGCCGTTACTAGTG
GATCCGAGCTCGGTACCAAGCTTGATGCATAGNCTTGAGTATTCTAACGCGTCACCTAAATAGGCTGGCGTAANC

SEQ ID NO. 435 Enterobacter cloacae

ATTCGCCCTTCGACGATTATGACTGATCCGGAAATGGCGGATGCAACCTACATCGAGCCAATTCACTGGGAAGTG
GTACGTAAAATCATCGAGAAAGAGCGTCCGGATGCGGTTCTGCCGACCATGGGTGGCCAGACTGCGCTGAACTGT
GCGCTGGAGCTGGAGCGTCAGGGCGTGCTGGAAGAGTTCGGCGTGACCATGATTGGTGCGACCGCCGACGCGATT
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GCTCACAACATGGAAGAGGCGCTGGCCGTTGCGGCTGAAGTGGGTTATCCGTGCATCATCCGTCCTTCCTTCACC
ATGGGCGGCACCGGCGGCGGTATCGCCTACAACCGCGAAGAGTTTGAAGAGATTTGCGAGCGCGGCCTGGATCTC
TCCCCAACCAAAGAGCTGCTGATTGATGAATCGCTGATTGGCTGGAAAGAGTACGAGATGGAAGTGGTGCGTGAT
AAAAACGACAACTGCATCATCGTCTGCTCCATCGAAAACTTCGATGCGATGGGTATCCACACCGGCGACTCCATT

ACCGTTGCGCCAGCGCAAACGCTGACCGACAAAGAGTACCAAATCATGCGTAACGCATCGATGGCGGTACTGCGT
GAAATCGGCGTCGAAACCGGTGGTTCTAACGTGCAGTTCTCGGTGAACCCGAAAACCGGCCGTCTGATTGTTATC
GAAATGAACCCGCGCGTGTCCCGCTCCTCCGCGCTGGCTTCTAAAGCGACCGGCTTCCCGATTGCGAAGGTGGCG
GCGAAACTGGCGGTCGGTTACACCCTTGACGAGCTGATGAACGATATCACCGGGGGCCGCACGCCTGCGTCCTTC
GAACCGTCTATCGACTACGTTGTGACCAAAATTCCACGCTTCAACTTCGAGAAATTCGCTGGCGCGAACGACCGT
CTGACCACCCAGATGAAATCAGTCGGCGAAGTAAGGGCGAATTCCAGCACACTGGCGGCCGTTACTAGTGGATCC
GAGCTCGGTACCAAGCTTGATGCATAGNCTTGAGTATTNCTAACGCGTCACCTAAATNGTCTGGCGAA

SEQ ID NO. 436 Morganella morganii

TTGGAGTCGCCTCTTCGACGATTATGACTGATCCGGCAAATGGCGGATGCGACTTACATCGAGCCGATTCACTGG
GAAGTGGTGCGCAAAATCATCGAAAAAGAGCGCCCGGATGCCGTTCTGCCGACCATGGGCGGACAAACCGCGCTG
AACTGTGCGCTGGATCTGGAACGTCACGGCGTGCTGGCAGAGTTCGGCGTCGAAATGATTGGCGCGACAGCAGAT
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GGTATCGCACACACCATGGAAGAAGCGTTTGCGGTCGCTGAAGATGTCGGATTCCCTGCATCATTCGTCCTTCAT
TTACTATGGGCGGCACGGGGGGCGGTATCGCTTATAACCGTGAAGAATTTGAAGAAATTTGTACTCGTGGATTAG
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GCGATAAAAACGACAACTGCATTATTGTCTGCTCTATCGAAAACTTTGATGCGATGGGTATCCATACTGGAGATT
CGATTACGGTTGCACCAGCTCAAACGTTAACGGATAAAGAGTACCAAATTATGCGTAATGCCTCGATGGCAGTCT
TACGCGAAATTGGTGTTGAAACAGGTGGCTCTAACGTTCAGTTTGCTGTTGACCCAAAAACAGGACGCTTAATTG
TTATTGAGATGAATCCACGTGTTTCACGTTCATCAGCGCTAGCGTCAAAAGCGACAGGATTTCCTATCGCTAAAA
TAGCGGCAAAACTGGCTGTGGGTTATACCCTTGATGAGTTAATGAATGATATCACTGGCGGTAGAACGCCTGCCT
CTTTTGAGCCTTCTATCGATTATGTGGTAACAAAAATTCCTCGATTTAATTTTGAAAAATTCGCAGGTACTAATG
ACAGATTAACCACACAAATGAAATCCGTAGGCGAGTAAGGGCGAATTCCAGCACACTGGCGGCCGTTACTAGTGG
ATCCGAGCTCGGTACCAAGCTTGATGCATAGCTTGAGTATTCTAACGCGTCACCTAAATA

SEQ ID NO. 437 Escherichia coli

CACGACGCCGCGCCGTTGTTCGACCACTTTATCGAGTTAATTGAGCAGTACCGTAAAACCGCTAAGTAATCAGGA
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AGGCGTGTGAGTTTGACTACTCTGGCGCGCAAGCGTGTAAAGCCCTGCGTGAAGAGGGTTACCGCGTCATTCTGG
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AAGTTGTACGCAAGATTATTGAAAAAGAGCGCCCGGACGCGGTGCTGCCAACGATGGGCGGTCAGACGGCGCTGA
ACTGCGCGCTGGAGCTGGAACGTCAGGGCGTGTTGGAAGAGTTCGGTGTCACCATGATTGGTGCCACTGCCGATG
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GTGATAAAAACGACAACTGCATCATCGTCTGCTCTATCGAAAACTTCGATGCGATGGGCATCCACACCGGTGACT
CCATCACTGTCGCGCCAGCCCAAACGCTGACCGACAAAGAATATCAAATCATGCGTAACGCCTCGATGGCGGTGC
TGCGTGAAATCGGCGTTGAAACCGGTGGTTCCAACGTTCAGTTTGCGGTGAACCCGAAAAACGGTCGTCTGATTG
TTATCGAAATGAACCCACGCGTGTCCCGTTCTTCGGCGCTGGCGTCGAAAGCGACCGGTTTCCCGATTGCTAAAG

TGGCGGCGAAACTGGCGGTGGGTTACACCCTCGACGAACTGATGAACGACATCACTGGCGGACGTACTCCGGCCT
CCTTCGAGCCGTCCATCGACTATGTGGTTACTAAAATTCCTCGCTTCAACTTCGAAAAATTCGCCGGTGCTAACG
ACCGTCTGACCACTCAGATGAAATCGGTTGGCGAAGTGATGGCGATTGGTCGCACGCAGCAGGAATCCCTGCAAA
AAGCGCTGCGCGGCCTGGAAGTCGGTGCGACTGGATTCGACCCGAAAGTGAGCCTGGATGACCCGGAAGCGTTAA
CCAAAATCCGTCGCGAACTGAAAGACGCAG

SEQ ID NO. 438 Proteus mirabilis

TCTTTCGNATTCGCCCTTCGACTATTATGACTGATCCTGAAATGGCAGATGCCACTTATATTGAGCCTATTCATT
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TAAACTGTGCCTTAGAATTAGAGCGTCAAGGGGTGTTAACTGAATTTGGCGTAACAATGATAGGTGCAACGGCTG
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CATTTACTATGGGGGGAACGGGAGGCGGGATCGCCTATAATCGTGAGGAATTTGAAGAAATTTGTACTCGAGGTT
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TATTACGCGAGATTGGGGTTGAAACCGGTGGCCCCAATGTGCAATTTGCCGTTGATCCTAAAACAGGGCGTTTAA
TTGTTATTGAAATGAACCCTCGTGTTTCTCGCTCATCAGCATTAGCGTCAAAAGCAACAGGTTTCCCAATTGCAA
AAGTCGCGGCAAAACTTGCAGTAGGTTATACCCTCGATGAGTTGATGAATGATATCACTGGAGGAAGAACCCCAG
CCTCTTTTGAACCTTCTATTGATTATGTAGTGACTAAAATCCCTCGCTTTAACTTTGAAAAATTTGCCGGTACCA
ATGACCGTTTAACCACGCAAATGAAGTCCGTAGGCGAAGTAAGGGCGAATTCCAGCACACTGGCGGCCGTTACTA
GTGGATCCGAGCTCGGTACCAAGCTTGATGCATAGCTTGAGTATTCTAACGAGTCACCTAAATGCTGGCG

SEQ ID NO. 439 Proteus vulgaris

ATTCGCCCTTCGACGATTATGACTGATCCTGAAATGGCGGATGCCACCTACATCGAGCCTATTCATTGGCAAGTC
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GCATTAGAATTAGAACGTCAAGGTGTGTTAGCTGAATTCGGTGTGACCATGATTGGTGCTACGGCCGATGCTATC
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AAAAACGACAACTGCATTATTGTCTGCTCTATCGAAAACTTTGATGCGATGGGTATCCATACTGGAGATTCGATT
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GAAATTGGTGTTGAAACAGGTGGCTCTAACGTTCAGTTTGCTGTTGACCCAAAACAGGACGCTTAATTGNTATTG
AGATGAATCCNCGTGTTTCACGTTCATCAGCGCTAGCGTCAAAAGCGACAGGATTTCCTATCGCTAAAATAGCGG
CAAAACTGGCTGTGGGTTATACCCTTGATGAGTTAATGAATGATATCACTGGCGGTAGAACGCCTGCCTCTTTTG
AGCCTTCTATCGATTATGTGGTAACAAAAATTCCTCGATTTAATTTTGAAAAATTCGCAGGTACTAATGACAGAT
TAGCCACACAAATGAAATCCGTTGGCGAAGTAAGGGCGAATTCCAGCACACTGGCGGCCGTTACTAGTGGATCCG
AGCTCGGTACCAAGCTTGATGCATAGCTTGAGTATTCTAACGCGTCACCTAAATGGCTGGCG

SEQ ID NO. 440 Neisseria meningitidis

CCAAACGTACCGACCTAAAATCCATCCTTATCATCGGCGCCGGCCCTATCGTTATCGGTCAGGCCTGCGAATTTG
ACTATTCGGGCGCACAGGCCTGCAAGGCTTTGCGTGAAGAAGGCTATAAAGTCATTTTGGTGAATTCCAACCCCG
CCACGATTATGACCGACCCTGAAATGGCGGATGTTACCTACATCGAGCCGATTATGTGGCAGACGGTGGAGAAGA
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TGGCACGCAACGGCGTGCTGGCAAAATACAATGTCGAGCTGATTGGCGCGACGGAAGACGCGATCGACAAGGCGG
AAGACCGCGGCCGCTTTAAAGAAGCGATGGAAAAAATCGGTTTGTCTTGCCCGAAATCTTTTGTCTGCCACACGA
TGAACGAAGCTTTGGCGGCGCAGGAGCAGGTCGGCTTCCCGACGCTGATTCGTCCTTCTTTCACGATGGGCGGTT
CGGGCGGCGGCATTGCCTACAATAAAGACGAGTTTTTGGCGATTTGCGAACGCGGTTTCGATGCGTCGCCCACGC
ACGAGCTGCTGATTGAGCAGTCCGTCCTCGGCTGGAAAGAGTACGAGATGGAGGTGGTGCGCGATAAGAACGATA
ACTGCATCATCATTTGCTCGATTGAAAACTTCGACCCGATGGGCGTGCATACGGGCGACTCGATTACGGTTGCGC
CGGCGCAAACATTGACAGACAAAGAATACCAAATCATGCGTAATGCTTCGTTGGCAGTATTGCGCGAAATCGGCG
TGGACACGGGTGGCTCAAACGTGCAGTTTGCGGTGAACCCTGAAAACGGCGAGATGATTGTGATTGAGATGAACC
CGCGCGTGAGCCGTTCATCCGCGCTGGCTTCCAAAGCGACGGGCTTCCCGATTGCGAAGGTGGCGGCGAAACTGG
CGGTCGGCTTTACGCTGGACGAGTTGCGCAACGACATCACCGGCGGTCGCACGCCCGCGTCGTTCGAGCCTTCGA
TTGATTATGTGGTAACCAAAATCCCGCGTTTCGCGTTTGAAAAATTCCCCGCCGCAGACGACCGCCTGACTACGC
AGATGAAATCGGTGGGCGAAGTGATGGCGATGGGACGCACGATTCAGGAAAGTTTCCAAAAAGCCCTGCGCGGCT
TGGAAACAGGCTTGTGCGGCTTCAATCCGAGAAGCTCCGACAAAGCGGAAATCCGCCGCG

SEQ ID NO. 441 Klebsiella oxytoca

ATTCGCCCTTCGACTATTATGACCGACCCGGAAATGGCCGATGCCACCTACATCGAGCCGATTCACTGGGAAGTG
GTGCGCAAGATCATTGAGAAAGAGCGTCCGGATGCGGTTCTGCCGACCATGGGCGGCCAGACGGCGCTGAACTGC
GCGCTGGAGCTGGAGCGTCAGGGCGTGCTGGCCGAGTTCGGCGTGACCATGATTGGCGCGACCGCCGACGCGATT
GATAAAGCCGAAGACCGCCGCCGTTTCGACGTGGCGATGAAGAAAATCGGTCTCGATACCGCGCGTTCCGGTATC
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TCGCCGACCAACGAGCTGCTGATTGATGAATCGCTGATCGGCTGGAAAGAGTACGAGATGGAAGTGGTGCGTGAT
AAAACGACAACTGCATCATCGTCTGCTCCATCGAAAACTTCGACGCGATGGGCGTCCACACCGGCGACTCCATCA
CCGTGGCGCCGGCGCAGACCCTGACCGACAAAGAGTACCAAATCATGCGTAACGCCTCGATGGCGGTACTGCGTG
AAATCGGCGTAGAGACCGGCGGTTCCAACGTTCAGTTCTCGGTGAACCCGAAAGATGGTCGCCTGATCGTTATCG
AAATGAACCCGCGCGTCTCCCGCTCCTCGGCGCTGGCCTCGAAAGCCACCGGCTTCCCGATCGCTAAAGTGGCGG
CGAAGCTGGCGGTTGGTTACACCCTTGATGAGCTGATGAACGATATCACCGGCGGCCGCACCCCGGCGTCGTTTG
AGCCGTCCATCGACTACGTCGTGACCAAAATCCCACGCTTCAACTTTGAAAAATTCGTCGGCGCGAACGACCGTC
TGACCACCCAGATGAAATCCGTCGGGGAAGTAAGGGCGAATTCCAGCACACTGGCGGCCGTTACTAGTGGATCCG
AGCTCGGTACCAAGCTTGATGCATAGCTTGAGTATTCTAACGCGTCACCTAAA

SEQ ID NO. 442 Legionella pneumophila

TTCGCCCTTCGACTATTATGACTGATCCTGAGCTTGCTGATGCCACCTATATAGAGCCTGTTCAATGGAAAGAAG
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CCTTGGACTTGGTAAGAGAAGGGGTATTAGCCAAGTACTCTGTTGAAATGATAGGAGCGACGCGTGAAGCCATAG

ACAGGGCGGAAGATAGAGAAAAATTTCGCCAGCTGATGATTAAAATCGGATTGGATATGCCAAGGTCGGCGATTG
CTCATAGCCTGGAAGAAGCAATTCAAGTACAAGCCCGTTTAGGCTTTCCTGCCATCATCAGGCCTTCATTTACCA
TGGGTGGTAGTGGAGGCGGTATTGCCTATAATCGTGAAGAATTTGAAGAAATTTGCATTAGAGGATTGGAGTTGT
CGCCAACTCACGAGCTTTTGATTGATGAATCGGTTCTGGGTTGGAAAGAATATGAAATGGAAGTCGTCAGGGATA
AAAATGATAATTGCATTATTGTTTGTACTATAGAGAATTTTGACCCTATGGGAGTGCATACTGGAGATTCCATTA
CCGTTGCTCCGGCACAAACATTAACTGATAAAGAATACCAACGGATGCGGGATGCGGCGATTAAAGTTCTAAGGG
CAGTTGGTGTGGATACGGGAGGTTCCAACGTTCGGTTTGCTATTAATCCTGAAGACGGGCGCATGCTGGTTGTGG
AAATGAACCCGCGTGTATCTCGAAGCTCGGCTTTGGCGTCAAAAGCAACCGGTTTTCCTATTGCTAAGGTCGCAG
CTAAATTGGCTGTGGGCTATACCTTGGATGAATTGAAAAACGAAATCACCGGAGGTAAAACACCTGCGTCCTTTG
AGCCCAGCATTGATTACGTCGTTACCAAAGTTCCACGGTTTAATTTTGATAAATTTCCACAAACTCCAGATACTC
TTACCACACAGATGAAATCAGTCGGCGAAGTAAGGGCGAATTCCAGCACACTGGCGGCCGTTACTAGTGGATCCG
AGCTCGGTACCAAGCTTGATGCATAGNCTTGAGTATTNCTAACGCGTCACCTAAATAGCTGGCGAAA

Figure 20 represents sequences amplified with molecular marker VII ((EG10839 & EG11396 or sfrB & yigC) in Gram-negative bacteria (SEQ ID NOs 443-451).

SEQ ID NO. 443 Pseudomonas aeruginosa

tccaccagcagcgccgcgcagatatggcagttgccgttgcggcagctctgcggacagtcgtagccaagccgccgg
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gctcccggcccatccggcagcaggcaaacgcggcattcggtcactgctggctggcgatcctcgagtcgtcgaggc
tctgtagcatcggctcgaacaaaggcccgagttcatgggccccctgggtcgaaaggtggttgttatccatgtaca

SEQ ID NO. 444 Pseudomonas syringae

ccgagcagacatggcagttaccgttgcgacagctttgcgggcattcatggcccagccgctgtgcagcatccagaa
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caaggcagcaaatccacggcgcacaggcaaaaaaaatggtgccccgaaggacaccatttttttgagccagcctgtc
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SEQ ID NO. 445 Bordetella parapertussis

aratggtgatggggcgcggcgcccggcgctcgggcctgctcaagctggccggcgtggcgctggtgggctggcagg
cataccggatctggcagtccgcgcgcgaggagcgccaggccgattgagccaggccggcaggcgggcggccggcgc
cgcccgcggcattgctacagtcccagcgtgtcccacatggcatccacccggcgcttgaccgcctcgtccatgtgt
atgggcgtgccccattcgcggctggtttcgcccggccacttgttggtggcgtccagccccatcttgccgcccagg
ccggacaccggcgaggcgaaatcgaggtaatcgatcggcgtgttctcgaccagcaccgtgtcgcgcacggggtcc
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ttggtgtacatgaactgccgcagcacgctccacaggccgaacatcacgcgcttggcgtggccggcgtactgcttg
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ccgcgcgtgatcaccaggccccaggcgagcaggggcgccacatcgcccggccagcaggtctggatgggcaggcgg
cccaggtcgacgtcggcgccttcccagacgatttcctggcaggcggcgctgcgcacggtcttggggctcatgtcc
cacagggcggctttcagcatggacaccttggccagcgcgtcgcgcaggcccttgggcgcttcgggctcgcgcagg
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gtgccgaacaggttggccagcaccggcatgtcggccggcgcgtcgttgtggcgggcgttctcgaacagcagggcc
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ttgagttcgccctggcgttcaagctgggcaagaaaatctcggaggtcgcgatacttcaaggcagatcccggcaaa
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tgcgtcagtggccggcctgttccgacagctggcccaaggagtgcaccaccatctcgccgaat

SEQ ID NO. 446 Neisseria meningitidis

acagaaaatcctcgaagacaccctgctggaacaatggcagtggctcaaacctaaagaaccgtaaacatcctgcgt
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ccatcatcacgcgcttggcgtgtccggcgtactgtttttcatgctcaccaccgccatgcggtaggagcagcctt
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acgcggtttcgtttggatggatgacgccttccaacacgatttctgcgcgggcaggcacttgcaaatcgttgccga
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ccttgatggagttgcaacaaaggacgttgaccatcgggttgggtaacgacattgcaatgcaaaccgaaggtgtcg
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SEQ ID NO. 447 Shigella flexneri

ctgaccagcacgaaaagaaaaggccgcgtctggcacgatgcggacacgatatacggtatccgtgatagctgctac
cgaggtcactttacagcttaaggttgtcatgcgctttctctgtcggatcgataaatagggcaaaacaaacgcgca
tcaggcgcttttaccgttgttaaaaatagccagttcatcccagatggcgtcaatatgcgcgacaacatctggatc
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acccagcccagagacaggcgaggcaaaatccagataatcaataggcgtattttctaccagaacagtatcccgcgc
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cacaaatttagtgtacataaactggcgtaagaacgaccagacgcccatcatgacgcgcttcgcgtgtccggcgta
ctgtttttgatcgtcactaccgccagacgataagaacagccttccggcggcaggtaaaaatcgacaatttccgg

gaactgtttttgcagaatcggtacaaacacttcgttcaacgccacgcccagtaccgcgggctcatctggcggacg
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ggcacccagcgccacagaaaccgggaaacgttcgcccggatgcgccgcacaccactcctgataatccagcgcgcc
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SEQ ID NO. 448 Escherichia coli K12

catgactgctttcgcgtaaaggttgatttcagaagcgccaatatgcagctcgataaaccctttttcatccggcgt
cgaagccattgagaacggacgtttgtcgcgctcatccatcactaccatcaaatactgaccagcacgaaaagaaaa
ggccgcgtctggcacgatgcggacacgatatacggtatccgtgatagcttctaccgaggtcactttacagcttaa
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cattat

SEQ ID NO. 449 Escherichia coli O157:H7

agaagcgccaatatgcagctcgataaacccttttcatccggcgtcgaggccattgagaacggacgtttgtcgcg
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tacggtatccgtgatagcttctaccgaggtcactttacagcttaaggttgtcatgcgctttctctgtcggatcga
taaatagggcaaaacaaacgcgcatcaggcgcttttaccgttgttaaaaatagccagttcatcccagatggcgtc
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cgtggcatccagccccatttttgaacccagcccggagacaggcgaggcaaaatccagataatcaataggcgtatt
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ttggcagggtgcaccgcgcagtcgctttgtcggcatgtttaacacctgcttaaactgcggcagcttatcaaacag
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cgggtccaccgggagcgtgatacgttttagctcaccctgctgttcaagcaacgtcaagaagtcgcgtaaatcgtt
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SEQ ID NO. 450 Bordetella bronchiseptica

tcccacatggcatccacccggcgcttgaccgcctcgtccatgtgtatgggcgtgccccattcgcggctggtttcg
cccggccacttgttggtggcgtccagccccatcttgccgcccaggccggacaccggcgaggcgaaatcgaggtaa
tcgatcggcgtgttctcgaccagcaccgtgtcgcgcacggggtccatgcgcgtggtcatggcccagaccacttcg
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agcgccacgcccagcacggccggctcgtcgggcggcttgccggtataggtggagtggtagatggggttgcgccgc
atggtgatgcggtccaccgtgaacaccgggaaccagtcctgctcgttgtagtagccggtatggtcgccatagggg
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tcggccggcgcgtcgttgtggcgggcgttctcgaacagcagggccgggccgccggcgcgcagcacccggtcggca
atctcggtcatttccagccgcgtcgagaccggcgcggtgatgcgtttgagttcgccctggcgttcaagctgggca

SEQ ID NO. 451 Bordetella pertussis

tgtatgggcgtgccccattcgcggctggtttcgcccggccacttgttggtggcgtccagccccatcttgccgccc
aggccggacaccggcgaggcgaaatccaggtaatcgataggcgcgttctcgaccagcaccgtgtcgcgcacgggg
tccatgcgcgtggtcatggcccagaccacttcggtccagtcgcgcgggtcgatgtcttcgtcgaccaccacgatg
aacttggtgtacatgaactgccgcagcacgctccacaggccgaacatcacgcgcttggcgtggccggcgtactgc
ttgcggatcgacaccaccgccaggcggtagctgcagccttccgggggcaggtagaaatcgacgatctcgggcagc
tggcggcgcagcagcggcacgaatacctcgttcagcgccacgcccagcacggccggctcgtcgggcggcttgccg
gtataggtggagtggtagatggggttgcgccgcatggtgatgcggtccaccgtgaacaccgggaaccagtcctgc
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cggctcagctcgacgtcggcgccttcccagacgatttcctggcaggcggcgctgcgcacggtcttggggctcatg
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ggcgtgccgaacaggttggccagcaccggcatgtcggccggcgcgtcgttgtggcgggcgttctcgaacagcagg
gccgggccgccggcgcgcagcacccggtcggcaatctcggtcatttccagccgcgtcgagaccggcgcggtgatg
cgtttgagttcgccc

Figure 21 represents sequences amplified with molecular marker VIII (hypothetic yleA protein) in Gram-negative bacteria (SEQ ID NOs 452-461).

SEQ ID NO. 452 Haemophilus influenzae

Tatctgctgctggcgtacctggtcgggctgagtacacaaaactgaagctcatatcaaagtttacttgtgcaatca
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cagccattttagatgaatcatattcattcatctggcagccccaagttttaatatgtaatttttgagtcattttct

SEQ ID NO. 453 Pasteurella multocida

ctacgcgtgataacgtcccacgccgagttcatcttctttacgagtacgattaatcaccatttgtggcgattgaac
aacgcgaagtcccatttgttcttcagttctaacgacttcaccacgcagtgagttagtaaacacatccgtgatctt
gatatcaacaaacttcccaatcatatcaggcgtgcccacaaaattgacgatacgattagtttctgtacgccctgt
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SEQ ID NO. 454 Haemophilus ducreyi

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SEQ ID NO. 455 Vibrio parahaemolyticus

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SEQ ID NO. 456 Yersinia pestis

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SEQ ID NO. 457 Salmonella typhimurium

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SEQ ID NO. 458 Vibrio cholerae

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SEQ ID NO. 459 Escherichia coli K12

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SEQ ID NO. 460 Escherichia coli O157:H7

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SEQ ID NO. 461 Pseudomonas aeruginosa

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